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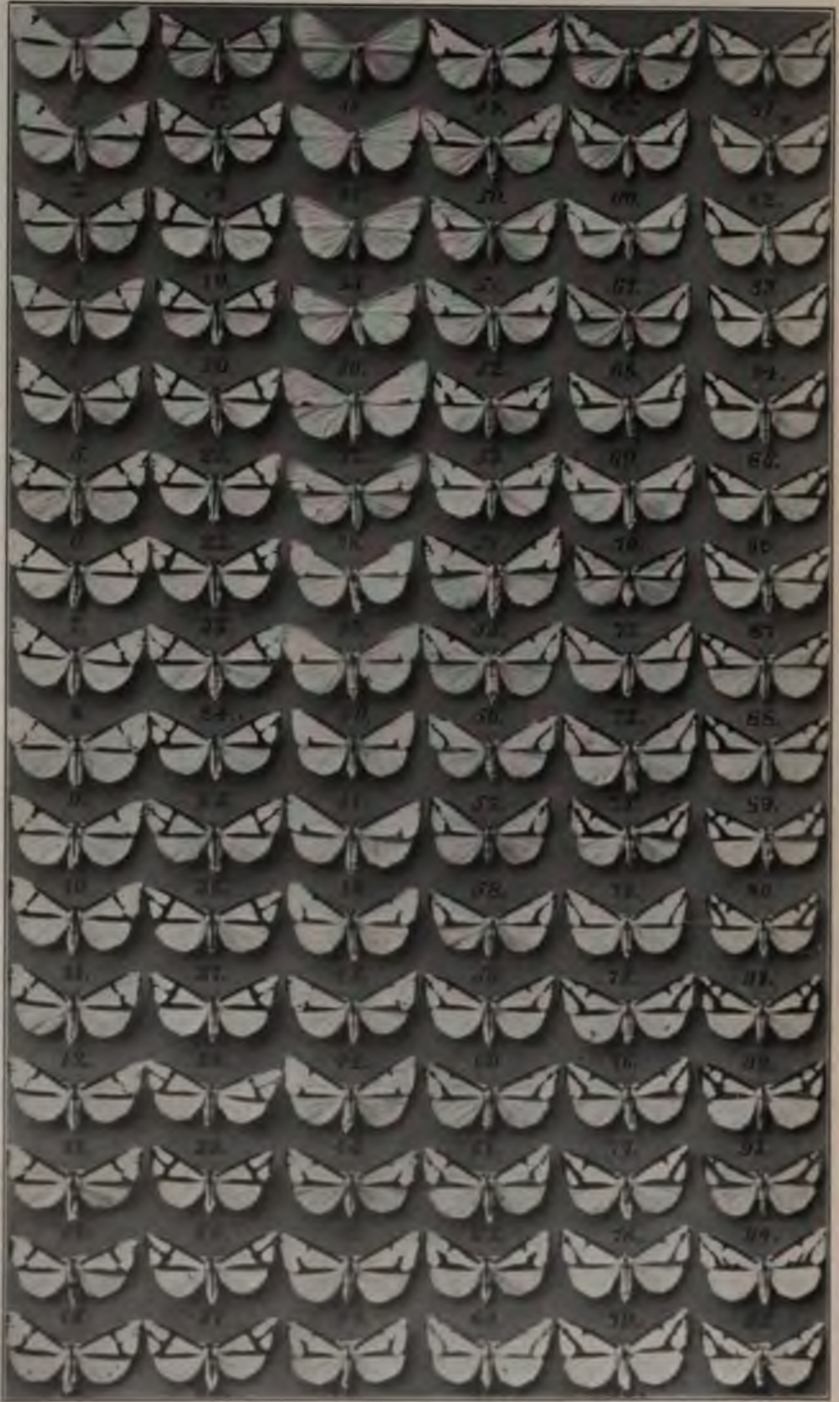

VARIATION IN HAPLOA (MERRICK).

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Variation in Haploa.

H. W. MERRICK, New Brighton, Penna.

The plate on the opposite page is interesting, I think, chiefly from the fact that the series of Haploas here shown are all selected from my catch of 1902, and are thus one season's brood, taken in quite a small piece of timber. Numbers 1-32, were taken on a hill-top covered with large hard wood timber, about three miles west of my home.

Numbers 33-96 were taken under similar conditions about one mile east of my home. The *H. contigua* (Nos. 1-32) and *H. militaris* (33-96) were selected from about an equal number taken of each species, and show much more variation in the latter than the former.

While the immaculate form of *militaris* is quite common, probably 25 to 30 per ct. of the entire brood, yet I have failed to find a single example of the immaculate form flying with the *contigua*.

It is interesting to note that while *contigua* is never found in the east woods (where I take the *militaris*) nor is *militaris* found in the west woods (where I take *contigua*), yet the only *H. lecontei* I have ever taken locally was taken in the west woods flying with the *contigua*.

H. militaris flies from June 10th to 20th, the yellow form (*H. dyarii*) flying with them, but the *H. contigua* does not appear until about July 10–20th). *H. clymene* appears in the east woods about July 1–10, after *militaris* are gone, but does not appear in the west woods.

The colored boys (Nos. 95–96) were so named from their remarkable resemblance to the human figure, when the wings are folded at rest.

A series of this variable genus, even from one locality, would in a few years' collecting become quite interesting, while if formed by exchange from different localities widely removed, would become intensely so.

A proposed new genus of Odonata (Dragonflies) of the Subfamily Aeschninae, Group Aeschna.

By E. B. Williamson, Bluffton, Indiana.

(With plate II)

CORYPHAESCHNA* n. g.

Upper piece of arculus longer than the lower piece; subcostal vein not prolonged beyond the nodus; male with anal triangle of 2 cells, a distinct anal angle, and auricles on the second abdominal segment; supplementary sector between the lower branch of the subnodal and the median sectors curved widely from the lower branch of the subnodal, 4-8 cells separating them at the widest point, for ¼–⅓ its length the supplementary sector is parallel to the posterior margin of the wing; subnodal sector forking under the middle of the pterostigma (in hind wings 1 ♂, 1 ♀, *adnexa*, Mexico, the forking is at level of inner end of pterostigma),* 2 rows of cells in the fork, 2 or 3, rarely 4 cells at margin; supplementary sector between the principal and nodal sectors originating far beyond pterostigma; submedian and supratriangular spaces cross-veined, the first cross-vein of the submedian space placed proximal to the first antecubital; supplementary sector between the short sector and the upper sector of the triangle apparently originating as the most anterior vein from the outer side of the triangle; inner side of the triangle of the hind wing not half as long as the outer side; median and short sectors converging till beyond the nodus when the short sector apparently merges into the median, the continuation of the short sector to the margin of the wing apparently a branch from the short sector at a point on the short sector 2 cells distant from the point of union of the short and median sectors; this apical portion of the short sector is S-shaped and is separated from the median sector by 2 or 3 cells for the distance of 2 cells, then by 1 cell to the margin; † 1 row of cells throughout or 2 rows in the proximal half of the space between the sectors of the triangle of the hind wing; anal loop of 3 vertical rows of cells and supplemental loop behind it of 2 horizontal rows; ‡

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* *Coryphe* Gr. apex; *Aeschna*, a genus of Odonata, "a name introduced by former writers," probably *aischros* Gr. ugly.

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*The upper branch of the fork is a continuation in direction of the subnodal, the lower branch springs from this. I do not understand Karsch's foot-note, p. 288 (see bibliography below), "*Aeschna ingens* Ramb., *A. juncea* (L.), *A. squamata* (Mull.), lassen mehrere feine Aeste des Subnodalsectors ähnlich dem Verhalten bei *Anax* Leach deutlich erkennen."

† The course of the short sector as found in *Aeschna juncea* undergoes considerable modification in the genus *Aeschna*. In *A. bonariensis* and *A. californica*, for example, a condition approximating *Coryphæschna* is reached, but in the *Aeschnas* the short sector appears forked with the upper branch merging into the median sector, while the lower branch is straighter than in *Coryphæschna*. Also in *Coryphæschna* the median and short sectors are more converging throughout their lengths than is the case in *Aeschna*.

‡Prof. Needham in 1897 drew up a tentative description of a new genus of Odonata with *ingens* as the type, naming several species of *Aeschna*

abdominal segments 3 and 4 similar in size and shape, in ♂ *adnexa* and ♂ *virens* 3 slightly constricted; superior abdominal appendages long and narrow, longer in the ♀, without teeth or hooks in either sex, and with only low keels. Segment 10 of ♂ without dorsal teeth.

Type.—Aeschna ingens Rambur. Insectes Névroptères, p. 192, 1842.

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I. Edm. de Selys Longchamps.—Synopsis des Aeschnines. Première partie: Classification. Bull. de l'Acad. roy. de Belg. 3^{me} serie, tome V, No. 6; 1883, pp. 711–748.

II. F. Karsch.—Kritik des Systems der Aeschniden. Entomologische Nachrichten. Jahrgang xvii (1891), No. 18, Seite 273-290.

My original MS. describing this genus has undergone considerable modification as the result of notes furnished me by Dr. Calvert who has studied *Aeschna adnexa* and *A. virens*, species not accessible to me which, he writes, belong to *Coryphaeschna*. With these notes as a basis the above characterization of the proposed new genus has been broadened to include the 3 species, *ingens*, *adnexa* and *virens*. Future study of other species will probably necessitate still farther modification in this direction, the tendency being doubtless to include specific characters in a generic definition. Dr. Calvert has also studied 4 ♂ and 3 ♀ of *ingens*, and I am indebted to him for several suggestions embodied in the above description. Of *A. virens* he has studied 9 front wings and 9 hind wings of males, and 8 front wings and 8 hind wings of females; of *adnexa* 7 front wings and 8 hind wings of males, and 7 front wings and 7 hind wings of females.

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as members of the proposed new genus. He has kindly placed this MS. in my hands, and to it I am indebted for the above character. In one wing of a ♀ *ingens* from Florida there are 2 vertical rows of cells in the anal loop. The supplemental loop is poorly defined in all the *adnexa* wings studied by Dr. Calvert, and in 1 ♀ of *virens* it consisted of 3 horizontal rows.

SOME VENATIONAL CHARACTERS OF FIVE GENERA OF ÆSCHNINÆ.

	ÆSCHNA.	CORYPHÆSCHNA.	EPIAESCHNA.	PLANAESCHNA.	NASIAESCHNA.
Inner side of triangle of hind wing.	More than half as long as outer side.	Not half as long as outer side.	Not half as long as outer side.	?	About half as long as outer side.
Supplementary sector between the short sector and the upper sector of the triangle.	Originating apparently as the most anterior of the veins arising from the outer side of the triangle. 3 or 4 rows of cells between the supplementary sector and the short sector, 1 or 2 rows of cells between at margin.	Origin similar to *Aeschna*. 2 or 3 rows of cells between the supplementary sector and the short sector, 1 cell between at margin. (Five rows of cells between supp. sector and short sector with 2 cells at margin in some *virens*.)	Originating apparently 1 row of cells anterior to the line on which it originates in *Aeschna*. 3 rows of cells between the supplementary sector and the short sector, 1 or 2 cells between at margin.	?	Originating as in *Epiaeschna*. 1 row of cells between the supplementary sector and the short sector throughout.
First cross-vein of submedian space.	Before the first antecubital (in *rufescens* same level in front wing).	Same as *Aeschna*.	After the first antecubital.	?	Like *Epiaeschna*.
Subnodal sector forking	At inner end of or, more usually, before the pterostigma.	Under the middle of the pterostigma. (See note on *adnexa* in generic description.)	Much before the pterostigma.	Midway between nodus and pterostigma.	Much before pterostigma.

	AESCHNA.	CORYPHAESCHNA	EPIAESCHNA.	PLANAESCHNA.	NASIAESCHNA.
Cells between fork of subnodal.	3 rows increasing at margin (in *erythromelas*, according to McLachlan's descriptions and in *melanictera*, according to Dr. Calvert, 2 rows, increasing).	2 rows, 2 or 3, rarely 4, at margin.	3 or 4 rows increasing to 8 or 9 at margin.	?	3 increasing.
Course of the short sector.	Slightly or abruptly diverging from the median beyond the level of the nodus; from this point of divergence 2 rows of cells between the sectors, which may become 1 or may continue as 2 rows to the margin. (See foot-note † page 3.)	See description above under *Coryphæschna* n. g. also foot-note † page 3.	Scarcely separating; 2 rows of cells for short distance then 1 row to the margin.	?	Parallel to the median; 2 rows for short distance, then 1 row at margin and for short distance before 2 rows.
Supplementary sector between the principal and nodal sectors originating	Before, under, or just beyond the pterostigma.	Far beyond the pterostigma.	Under the pterostigma.	?	Under the pterostigma.

	AESCHNA.	CORYPHAESCHNA.	EPIAESCHNA.	PLANAESCHNA.	NASIAESCHNA.
Number of rows of cells between the sectors of the triangle in the hind wing.	2 (1 in *rufescens*).	1 throughout or 2 rows in the proximal half of the space between the sectors.	1 increasing.	?	1 increasing.
Number of cells in internal triangle.	2 or 1 (species with 1 may not be congeneric.)	1 or 2.	Usually 2 in front wing and 1 in hind wing.	?	1.
First cell of triangle.	Divided or not (species with first cell undivided may not be congeneric).	Very rarely divided	Divided in front wing, rarely divided in hind wing.	?	Rarely divided.
Number of rows of cells between the lower branch of the subnodal and the supplementary sector below it.	3 to 6.	4 to 8, usually 5 in *ingens*; usually 6 in *virens*; usually 4 in *adnexa*.	2, rarely 1.	1.	1.

The above study is based on the following material: ***Aeschna grandis*** ♀; ***A. juncea*** ♀; ***A. cyanea*** ♂, 2 ♀; ***A. constricta*** 2 ♂, ♀; ***A. clepsydra*** 2 ♂; ***A. verticalis*** ♂; ***A. rufescens*** 3 ♂; ***A. mixta*** 2 ♂, 2 ♀; ***A. californica*** ♂; ***A. multicolor*** 2 ♂, ♀; ***A. minuscula*** McLachlan's description; ***A. subpupillata*** McLachlan's description; ***A. diffinis*** ♂; ***A. bonariensis***, photo of ♀, one side, by Prof. Needham; ***A. erythromelas***, McLachlan's description; ***Coryphæschna ingens*** 3 ♂, 2 ♀, ***Epiæschna heros*** ♂, 4 ♀; ***Planæschna milnei*** McLachlan's and Sely's descriptions; ***Nasiæschna pentacantha*** ♀.

Coryphaeschna ingens (Rambur).

Abdomen: ♂ 68-71, ♀ 76-78. Hind wing: ♂ 55-56, ♀ 58. Thorax green, marked with brown. Abdomen black or brown, marked with green or yellowish green; segments 3-8 each with 3 narrow rings of color, the basal ring largely concealed by the apex of the preceding segment, the median ring anterior to the middle of the segment, and the apical ring separated from the extreme apex by a black ring; on the sides the basal ring is produced posteriorly, the other two anteriorly; mid-dorsal abdominal carina narrowly yellow (or green ?), with numerous small black teeth, the yellow darker or black at the median transverse ring of green. Auricles in 2 in the male inconspicuous by reason of size and color, green, the margin and the 3 or 4 teeth dark reddish brown or black; sternum of 10 in the female not greatly developed, truncated, with about 50 subequal teeth. Superior appendages about 1.5 mm. wide, and about 7.5 mm. long in the male and 12 mm. long in the female. Supratriangular space with 3 or 4 cross-veins; post costa in front wing slightly angled at the internal triangle, straight in the hind wing: submedian area in front wing with 4 to 6, in hind wing with 3 to 4, cross-veins, including the inner side of the internal triangle; antecubitals: frontwing, 18-22; hind wing, 13-17; postcubitals: front wing, 9-12; hind wing, 12-13; in the front wing the external point of the triangle is between the fifth and eighth cross-veins between the median and short sectors, in the hind wing between the fourth and sixth; 2 cells in the anal triangle of the male; length of pterostigma, 5 mm.; number of cells under pterostigma; front wing, 3 to 4; hind wing, 3 to 4.*

Distribution.—Georgia, Florida and Cuba. I have studied specimens from Florida collected in March and April by Mr. W. S. Blatchley, and Hubbard and Schwartz.

Synopsis of Three Species of Coryphæschna. †

By Philip P. Calvert.

C. ingens Rambur.

Dorsum of thorax predominantly reddish-brown, a green antehumeral stripe (which at its upper end may be confluent with a short green stripe which divides the upper half of the brown humeral stripe lengthwise),

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* In such a short article as the above I have deemed it desirable at the present time to use the older and more familiar wing terminology rather than the preferable system proposed by Comstock and Needham.

† It must not be inferred, either from this synopsis or from the notes which I have furnished Mr. Williamson, that I assume any responsibility for the erection of this new genus. I have not made any researches to determine whether the separation of *Coryphæschna* be justified or not. —P. P. C.

which is nearly as wide as the brown humeral stripe. Sides of thorax green, a reddish brown band occupying nearly all of the metepisternum, and the anterior edge of the metepimeron, or merely forming a rather wide stripe on both sides of the second lateral suture. Tip of the vertex pale green, face bright green: the superior, curved, transverse groove of the anterior surface of the frons not filled with dark brown or black. Male with the third abdominal segment but very faintly constricted, the inferior appendage reaching to one-half the length of the superiors. Female with the four blackish spots on abd. seg. 2 transversely elongated, and the abdominal appendages extremely long. Abdomen (excl. apps.*) ♂ 58-61, ♀ 65; sup. apps. ♂ 7-7.75, ♀ 14; width of head ♂ 10.5-11.5, ♀ 11; hind wing ♂ 56-59, ♀ 58-60; pterostigma of front wings ♂ ♀ 6 mm.

Hab.—Georgia, Florida, Cuba. I have studied only Floridan examples.

C. virens Rambur.

Dorsum of thorax in life bright green, a line on each side of the median carina and a short, oblique, almost transverse, antehumeral line, brown. Sides of thorax green, brown confined to lines on the humeral and second lateral sutures. Tip of vertex pale green, face bright green; the superior, curved, transverse groove on the anterior surface of the frons not filled with black or dark brown (except in one Cuban ♀ which otherwise agrees with typical *virens*). Male with the third abdominal segment slightly constricted, the inferior appendage reaching to about three-fifths of the length of the superiors. Female with the four blackish spots on abd. seg. 2 nearly square, and the abdominal appendages moderately long. Abdomen (excl. app.) ♂ 50-57, ♀ 51-64; sup. apps. ♂ 5-6.5, ♀ 7 (?); width of head ♂♀ 10-11; hind wings ♂ 50-56, ♀ 51-60; pterostigma of front wings ♂♀ 4.5-5.5.

Hab.—Georgia (?), Cuba, Isle of Pines, Hayti, Trinidad, Mexico, Panama, Venezuela, Amazons, Bolivia. I have seen material from seven of these localities, details for which and for *adnexa* will be given in the Biologia Centrali-Americana.

C. adnexa Hagen.

Thorax as described above for *virens*. Tip of vertex blackish (green in two Mexican females), face bright blue (♂) or green (♀), the black T-spot of the frons extending on the anterior surface and filling up the superior, curved, transverse groove thereon (except in the Mexican examples). Male with the third abdominal segment slightly constricted, the inferior appendage reaching to one-third the length of the superiors.

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* Contrary to my usual custom, I give the length of the abdomen for these species exclusive of the appendages, since the latter are so frequently broken off in the Aeschninæ.—P. P. C.

Female with the abdominal appendages moderately long. Abdomen (excl. apps.) ♂ 45-46, ♀ 47-48; sup. apps. ♂ 6-6.5, ♀ 7.5; width of head ♂♀ 8.5-9; hind wing ♂ 41.5-43, ♀ 42-43; pterostigma of front wings ♂ 3.7-4, ♀ 4.

Hab.—Cuba, Hayti, Mexico, Honduras, Amazons. All these localities are represented in the material I have seen.

EXPLANATION OF PLATE II.

Front and hind wings, from photographs (Williamson), of

1. *Aeschna juncea* Linn. ♀ x 1½.
2. *Coryphæschna ingens* Ramb. ♂ x 2.
3. *Epiæschna heros* Fab. ♀ x 2.

Three Undescribed Lepidoptera from Southern California.

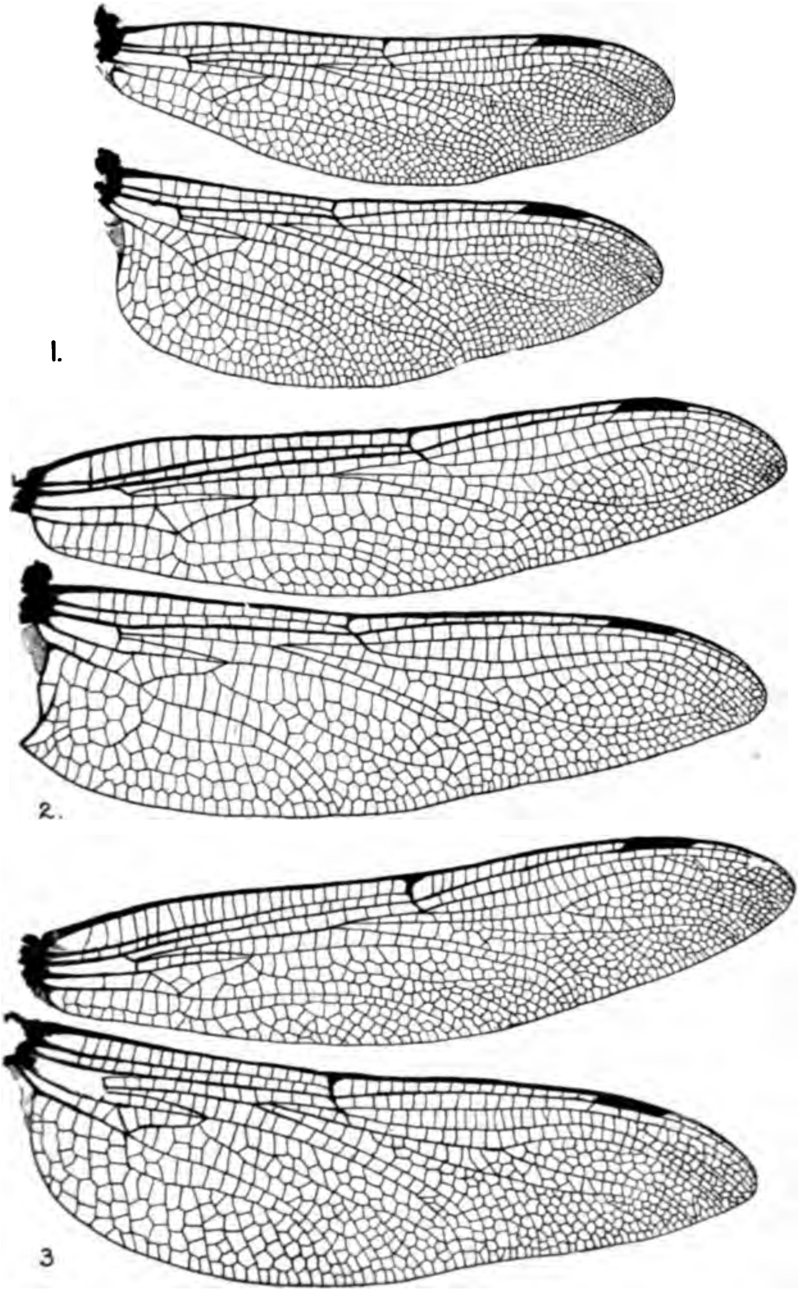
By Fordyce Grinnell, Jr., Palo Alto, Cal.

Thecla spadix Henry Edwards.—♂.—Expands $1\frac{1}{16}$ to $1\frac{5}{16}$ inches. Upper side, primaries, olive merging into hair brown towards the inner margin. Darkest towards the apex. Secondaries entire olive except the inner margin, which is drab. Underside fawn color on both wings. The primaries have a very faint line of dashes parallel to the outer margin, and a very faint discal spot. On the secondaries a comparatively large discal spot. An irregular row of dashes parallel to the outer margin, continuous with those of the primaries and about two thirds of the distance from the inner margin. In the region of the median nervules close to the outer margin, there is a black crescent and dot enclosing a red spot. In the anal angle there is a black field overlaid with blue scales and a white spot between two black dots. Tails short, terminated with white. Body same color as the wings, but covered with quite long white hairs. Antennæ ringed with alternate white and black rings. Fringes white.

Habitat.—Mountains of Southern California.

Types 2 ♂, collection California Academy of Sciences, taken by the writer on Mt. Wilson, Sierra Madre Mountains, near Pasadena. Mr. J. Elmer Brown took specimens on Mt. Lowe in the same range of mountains.

I took most of my specimens on June 25 on Mt. Wilson, flying around the clumps of chaparral along the trail. It is the swiftest and most wary *Thecla* that I have had any experience with. A colony is usually found gyrating around some favorite shrub. After they become settled on a twig, it is



1. ÆSCHNA JUNCEA—(LINN) ♀. 2. CORYPHÆSCHNA INGENS—(RAMB.) ♂.
3. EPIÆSCHNA HEROS—(FAB.) ♀.

almost impossible to see them, and then the collector will have to be careful in the use of his net or he will ruin his weapon on account of the thorny and scrubby nature of the vegetation. I managed to take about twenty-five of these insects this year and only one female.

This species was described from one female taken by R. H. Stretch at Tehachepi Pass, and as far as I know, has not been noticed since or the male described.

Pamphila sabuleti var. **tecumseh** n. var.—Expands $\frac{7}{8}$ inch. Differs from typical *P. sabuleti* by being considerably smaller and in having the black markings more extended. On the lower side the markings are not so heavy.

Habitat.—High Sierras of California.

The types which came from the Little Crabtree Meadow near Mt. Whitney, collected by Mr. Daggett, are deposited in the California Academy of Sciences. There are specimens in the latter museum collected by Hoffman, of the Geological Survey, many years ago.

This subspecies can be easily recognized from the typical form by its much smaller size, which is constant in a long series.

Anatolmis regulus, n. sp.—Expands $1\frac{3}{8}$ inches. Upper side of primaries entirely poppy red, with the exception of a black fringe extending from the outer third of the costa around to the inner angle. Secondaries poppy red with a trace of carmine, the black marginal band extending from the apex of the costal margin to the inner edge, where it occupies a little less than one-half of the wing, along the inner edge it occupies about one-third of the wing. The underside is same color as the upper but paler. Abdomen black or dark purple, also legs. Thorax poppy red. Antennæ purple.

Habitat.—Sierra Madre Mountains, Los Angeles Co., Cal.

Type in collection of the California Academy of Sciences.

Described from one specimen taken on Mt. Wilson June 25, 1902, flying along the trail through the brush; another was taken but it escaped. Mr. Brown took several in Milliards canon in the same range.

This species differs from *grotei* in not having any orange on the wings and in having the black margin very much narrower. *A. fulgens* has the secondaries almost entirely black and is smaller.

A List of Insects Taken in the Adirondack Mountains, New York.—II.

By Alex. D. McGillivray and C. O. Houghton.

DIPTERA.*

Mycetophilidæ.

Mycetophila punctata *Meigen.*
Sciophila pulchra *n. sp.*†
Sciara *Sp.*

Blepharoceridæ.

Blepharocera capitata *Loew.*

Culicidæ.

Culex impiger *Walker.*

Chironomidæ.

Orthocladius par *Coquillett.*
Ceratopogon *sp.*

Tipulidæ.

Limnophila macrocera *Say.*
Tipula strepens *Loew.*
Pachyrrhina ferruginea *Fabr.*
" pedunculata *Loew.*

Bibionidæ.

Bibio albipennis *Say.*
" femoratus *Wied.*
" xanthopus *Wied.*
Dilophus serraticollis *Walker.*

Simuliidæ.

Simulium hirtipes *Fries.*‡
" meridionale *Riley.*
" venustum *Say.*
" vittatum *Zett.*

Rhyphidæ.

Rhyphus alternatus *Say.*

Leptidæ.

Xylophagus persequus *Walker.* =
X. rufipes *Loew ?*
Chrysophila quadrata *Say.*
Leptis mystacea *Macq.*

Stratiomyidæ.

Beris viridis *Say.*

Tabanidæ.

Chrysops niger *Macq.*
" excitans *Walker.*
" sodius *O. S.*
" fugax *O. S.*
" mitis *O. S.*
Tabanus zonalis *Kirby.*
" lasiophthalmus *Macq.*

Asilidæ.

Cyrtopogon chrysopogon *Loew.*
Dasyllis flavicollis *Say.*
" posticata *Say.*
Laphria pubescens *Will.*

Therevidæ.

Psilocephala melanoprocta *Loew.*
" munda *Loew.*
Thereva flavicincta *Loew.*
" strigipes *Loew.*

Empidæ.

Empis rufescens *Loew.*
Rhamphomyia virgata *Coquillett.*
" nigricans *Loew.*
" rustica *Loew.*
Hilara tristis *Loew.*
" unicolor *Loew.*

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* We are indebted to Mr. O. A. Johannsen for the determination of all the species embraced in this list.

† Described in the next article.

‡ An European species. Has also been found in Idaho.

Dolichopodidæ.

Dolichopus palaestricus *Loew*.
" scoparius *Loew*.
" *Sp*.
Psilopus scobinator *Loew*.

Syrphidæ.

Microdon tristis *Loew*.
Paragus tibialis *Fallen*.
Platychirus hyperboreus *Staeger*.
Melanostoma mellinum *Linne*.
Syrphus ribesii *Linne*.
" arcuatus *Fallen*.
" amalopsis *O. S.*
Sphærophora cylindrica *Say*.=S. scripta *Linne?*
Temnostoma bombylans *Fabr*.
" alternans *Low*.
Sericomyia militaris *Walker*.
" bifasciata *Williston*.
" chalcopyga *Loew*.
Sphecomyia vittata *Wied*.
Eristalis tenax *Linne*.
" transversus *Wied*.
Xylota curvipes *Loew*
" ejuncida *Say*.
" marginalis *Will*.
Syritta pipiens *Linne*.
Mallota cimbiciformis *Fallen*.
" posticata *Fabr*.
Volucella facialis *Will*.
Criorhina intersistens *Walker*.
Pipeza pisticoides *Will*.

Pipunculidæ.

Pipunculus fusca *Loew*.

Conopidæ.

Zodion fulvifrons *Say*.

Muscidæ acalyptratæ.

Meromyza americana *Fitch*.
Phortica leucostoma *Loew*.
Loxocera fallax *Loew*.
Aciura nigricornis *Doane*.
Tephritis albiceps *Loew*.
Sapromyza lupulina *Fabr*.
Sapromyza notata *Fallen*.
" resinosa *Wied*.
Lauxania cylindricornis *Meigen*.
" obscura *Loew*.
Lonchea rufitarsis *Macq*.
Tetanocera arcuata *Loew*.
" flavescens *Loew*.
" plebeja *Loew*.
" saratogensis *Fitch*.
Scatophaga stercoraria *Linne*.

Muscidæ calpytratæ.

Anthomyiidæ.

Chortophila lævis *Stein*.
Homalomyia canicularis *Linne*.
Limnophora diaphana *Wied*.
Coenosia geniculata *Fallen*.

Sarcophagidæ.

Sarcophaga sarraceniæ *Riley*.
" 2 *spp*.

Muscidæ.

Muscina assimilis *Fallen*.
Hæmatobia serrata *Desv*.
Calliphora viridescens *Desv*.
Lucilia cæsar *Linne*.

Tachinidæ.

Cistogaster immaculata *Macq*.
Cryptomeigenia theutis *Walker*.
Gymnosoma fuliginosa *Desv*.
Melanophrys insolita *Walker*.
Exorista eudryæ *Towns*.
Peleteria rubusta *Wied*.
" tessellata *Fabr*.
Echinomyia florum *Walker*.
" algens *Wied*.
Tachina rustica *Fallen*.
Epalpus signifera *Walker*.
Metopia leucocephala *Rossi*.
Hypostena barbata *Coq*.

Notes on Some Adirondack Diptera Collected by Messrs. MacGillivray and Houghton.

BY O. A. JOHANNSEN.

The following notes are published as supplementary to the "List, etc.," given by Messrs. MacGillivray and Houghton in the preceding pages. All the flies were collected near Axton, N. Y., in June, 1901.

Limnophila macrocera Say. Compl. Wr. ii, 46.

A single male specimen in the collection agrees with Osten Sacken's description in Monographs, etc., iv, p. 294, in every particular excepting that it possesses two supernumerary cross-veins in the cell R_2 (Comst.) proximad of the cross-vein of cell R_1 in the one wing, and one supernumerary in the other.

Pachyrrhina peduncula1ta Loew. Centur. iv, 24.

♂.—In the specimen in hand the sides of the first abdominal segment are yellow.

Sciophila pulchra, n. sp.

This fly differs from *S. subcærulea* Coq. in the following particulars: The thorax has no bluish tinge, the mouth parts are black and not yellow, and the antennæ are gray. Length, 10 mm.

♀.—Black, polished, with a brownish tinge. Palpi black, basal joint yellowish; face, front and occiput shining black. Antennæ fuscous, with whitish, very short appressed pile. Dorsum of the thorax, scutellum, metanotum and pleuræ polished black, sparsely covered with very short pale hairs; the prothoracic spiracle, the dorso-pleural suture, and behind the root of the wings slightly yellowish. Abdomen shining black with a brownish tinge, especially at the incisures and the venter. The hairs covering the abdomen are short and pale. Femora and coxæ, and anterior and middle tibiæ are a deep yellow; hind tibiæ are slightly infuscated, all tarsi are brown, darker apically; tips of the posterior femora and of all tibiæ are brown. The middle femora have a short stout blunt spur on the under side near the apex; the fore and hind tibiæ each with one, the middle tibiæ with two spurs. The wing venation resembles figure 8a, plate xix, in Winnertz' "Pilzmuecken," the forking of the Cubitus (Comst.) being proximad of the cross vein, but differs in that the small cross vein is nearer the base of the small cell; R is straighter, and R. 4+5 is slightly curved forward so that the distal third is parallel with R_1

and ends more than the length of the posterior cross-vein before the tip of the wing. The cell R_1 is about one-and-a-half longer than broad. The wings are short haired; the veins are yellow excepting the cross-veins which are dark brown. Covering the posterior cross-vein is a pale brown cloud, and near the apex below Radius$_1$ is another. The halteres are a dusky yellow or brown, the base of the peduncle is yellow. Described from one specimen taken June, 1901.

Sciara, sp.

A single female specimen agrees with Winnertz' description *S. carbonaria* Meigen. The wing venation is like that shown in tab. v, fig. 1, of Lundbeck's Diptera Groenlandica.

Dilophus serraticollis, Walker, List, etc, i, 117.

One male and one female specimen. Both the male and the female have a toothed ridge upon the pronotum and another upon the anterior part of the mesonotum; a row of spines on the middle of the anterior tibia and the usual crown of spines at the tip. The hind coxæ are somewhat infuscated. The female differs from *D. obesulus* Loew. in having no rufous on the pleuræ.

Simulium hirtipes Fries. Monogr. Simuliar. 17.5, 1824. Schiner, Fauna, ii, p. 368.

As far as I am aware this is the first record of this fly in America. I have compared them with specimens from Europe and found them identical. The fly is very common during May and the early part of June. Specimens have also been received from Ithaca, N. Y., and from Idaho.

Thereva strigipes, Loew., Centur. ix, 72.

The open cell Media$_3$ would place this species in the genus *Dialineura* Rond. The specimen in hand has a brownish black thorax with two narrow longitudinal stripes not mentioned in Loew's description. In other respects it agrees perfectly.

Xylota marginalis, Williston. Synopsis, p. 226.

Of three specimens two agree with the description given by Prof. Williston. the third differs as follows: The fore tibiæ are brown, the middle and hind pairs are black, their bases yellowish. The first and second abdominal segments are black, the latter with two small transversely oval red spots near the posterior margin; the third and fourth are red, the former with a black median stripe and black lateral and posterior margins, the latter with black on the disc.

Volucella facialis, Williston. Synopsis, 137.

The specimen agrees with the description of *V. facialis* (a Californian species) in having the yellow face, the black pile on the dorsum of the thorax and the yellow pile on the fourth and fifth segments of the abdomen; but it also has yellow pile on the pleura, in this respect agreeing with *V. evecta* Walker.

Pipiza pisticoides, Will. Synopsis, p 29.

The specimen (female) has the third joint of the antenna a little longer than wide; the pile on the abdomen is about as long as that on the eyes; and the tibiæ are brown with paler extremities. Length, 6 mm.

Actura nigricornis, Doane. Jr. N. Y. Ent. Soc., 1899.

In this specimen (a female) there are four scutellar bristles instead of two, as stated by Mr. Doane. The abdomen (which is wanting in Mr. Doane's specimen) is a shining black, except the first segment, which is reddish yellow with a slightly darker posterior margin.

Sarcophaga, sp. ?

♂.—This species goes into the couplet with *S. atropos* in Dr. Schiner's key. It differs as follows. The abdominal spots appear grayish white with a bluish tinge when viewed from behind and yellowish when viewed from in front, the frontal stripe is wide and dull black, the rest of the front and sides of the face golden. The cheeks are black with black hair. The thoracic markings are as given by Schiner for *S. atropos*; the dorsocentrals 4 4; sternopleurals 2.1; the thorax, abdomen, and legs excepting the tarsi with long fine nearly erect hair among the setæ. The hair on the inner side of the hind tibia is nearly as long, but not so dense, as with the European *S. carnaria*. The middle tibiæ have four or five, the posterior pair have nine or ten setæ besides the apical ones. The genitalia of the male are elongate, black, the anal segment is black with a gray posterior margin. The articulation of the claspers is reddish brown. The basal section of R_{4+5} is bristly half way to the small cross-vein. The female is like the male excepting for the sexual characters. Length, 9-10 mm.

Sarcophaga, sp. b.

This species goes into the couplet with *S. affinis* Zett. in Dr. Schiner's key. The abdomen may be called tessellated. The male genitalia are inconspicuous. From *S. affinis* it differs in having a small costal spine on the wing; the elongate black spots on the abdomen are arranged in three rows, confluent on the hind margin of each segment. The tibiæ have but few bristles. Dorso-centrals 3.3; sterno-pleurals 1.1. 1. Vein R_{4+5} has 3 or 4 bristles near the base. Male and female. Length 7 mm

A Trip After Papilio Homerus.*

By Captain Wirt Robinson, U. S. A.

We sailed June 14 for Colombia, landed June 23d at Savanilla, and that day went on to Barranquilla. I caught in my hat, from car window as we went along, a huge metallic buprestid. On arriving at Barranquilla, to my disgust, I found that we would not be allowed to use our guns, to leave limits of town, to go out of doors after dark, our mail was opened, we were followed by spies, and altogether so molested that I made up my mind to clear out at once, and returned next day to the wharf to catch our steamer. Found there another steamer of same line bound back for Jamaica, and transferred to her. On night of 24th caught on deck of our steamer a small sphinx which I think is *Aellopos tantalus*. On morning of 25th, before we sailed, got permission to leave wharf and go ashore after insects. Caught a few insignificant things, and found a bush covered with white caterpillars, rather flat than thick, size of *H. io* caterpillars, but with long brownish red hairs at base of which were clumps of small red spines; a few of these were already spinning cocoons, so we gathered them in, over 100 in all. In so doing were frightfully stung, the pain increasing after we got aboard and enough to drive us nearly distracted. The cocoons greyish and flat and plastered to tree trunk, several in clumps. Inside a compact case with flaps or valves at end. The chrysalid emerges, pierces outer loose silk and after this fly emerges leaving chrysalid case protruding like goat moths! Our worms made over 100 cocoons, and they began to hatch on way back north from Kingston, giving those moths which you identify as belonging to *Gasina* sp. The female is much larger than the male. Although these hatched, only a few came out and fewer yet were perfect. They hatched during the night and the males were all battered by daybreak. Only a small per cent. hatched, the majority have been steadily giving me crops of large flies, like those which are found at times in our *cecropia*, but only one from each cocoon. On the day we left we also caught the ♀ *Pap.* (*near P. alyattes*) ? which flew across the deck of our steamer just as we were leaving.

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* Extract from a letter to Prof. E. J. Smith, Jr.

Reached Kingston, Jamaica, evening of Friday, 27, and before turning in I made a bee line for Mr. C. B. Taylor, whom I met on trip down, who had collected for years in Jamaica and knew localities, etc. He had told me that he expected to leave in a few days for the mountains, and I was afraid he might be gone. Found him in and learned from him that nearly all *homerus* ever taken on the island had been found near Bath, at eastern end. He, in all his years' collecting, had only gotten three. One he raised from caterpillar, two others, ♂ and ♀, were caught by his brother-in-law as they were in connection on sand on edge of Devil's River (1½ miles from Bath). His brother-in-law was in bathing when female lit on sand and began sucking, and almost at same time male came to her, and he caught both with his handkerchief! Taylor said that I would be lucky if I got two in three years. Saturday, June 28, we went out in trolley car to Hope Botanic Gardens, and got a number of flies, nothing very good or in very good condition. The Gardens cover 200 acres. In one place I noticed several acres of Cuban tobacco gone to seed. I immediately laid my plans, went back to the hotel and got my reflector hunting lamp and returned before dark. Got in two hours about 50 sphinges of 9 species. 10 *cingulata*, 7 *vitis*, 8 *jamaicenses*, 1 *brontes*, 1 *ello*, 2 *tersa*, 11 *labruscæ*, 6 *Anceryx alope*, 2 *duponchelli* and missed several *ficus*. Also got the little *C. nobilitella*, *Pap. polycrates*, *Terias elathea*, etc. The next night got 25 more, 1 *ficus*, 1 *labruscæ*, 4 *vitis*, 1 *lineata*, 1 *brontes*, 1 *ello*, 5 *Anceryx alope*, 5 *jamaicensis*, 3 *cingulata*. Next night, Monday, June 30, 25 more, 5 *jamaicensis*, 6 *alope*, 1 *cingulata*, 3 *vitis*, 1 *ello*, 5 *labruscæ*. We left Kingston Tuesday, A. M., July 1st, on a little steamer to Port Morant, arrived P. M., and drove over to Bath, 10 miles, took quarters at Mrs. Duffy's. Here we worked hard until July 10th, with very little results, got a few poor *Pap. pelaus;* many *Victorina steneles* (commonest fly on island next to *Anartia saturata*), some fine *Erebus odora*, and smaller yellowish moth; some *Gynæcia dirca*, *Callisto xangis*, a few more sphinges at a little patch of tobacco; a fine male *Aganisthos orion* (which mouse carefully chewed up other night); few *Agraulis vanillæ*, *E. hegesia*, *Danais jamaicensis*, etc. We wasted much time because of Mr. Taylor's suggestion of Devil's River. We waded this daily and fought mosquitoes and heat and brush, but to no avail. July 10th my brother was a little ailing. I was discouraged, but went out determined to make one more attempt. I took the trail to the Cuna Cuna Pass, which in a little over six miles climbs 2,700 feet. I made up my mind to push on to the summit. I had along my cane gun and when within a mile of the summit shot a queer flycatcher sitting on a twig over the path. I carried it along for 50 yards until I reached a convenient stone and sat down to wrap it up in cotton to put in my collecting basket. Whilst sitting here I happened to glance up the road and 50 yards ahead of me, sailing slowly towards me, I saw the big shape of black and yellow that I had been straining my eyes for. I grabbed my net and made for it at full speed. It was coming along and would pass out of reach above me. I scrambled up on the steep bank to my right, and as it got abreast, made a wild leap into the air and struck, hit it full, but, as happened a number of times thereafter, the fly refused to slide into bag of net, and was knocked out. I fell on all fours on the ground and saw my prize hit the grass six feet ahead of me, and with a spring like a tiger, got the net over it before it recovered. They do not flutter in the net, but crawl about with much dignity. I killed it and then realizing finally that I had it, I got buck fever and began to tremble so I could not stand up or take it out of my net for several minutes. I wish you could see one of these beauties when fresh and velvety. After recovering I went on to the summit, but found nothing except the rare *Ithomia*. Returning I looked up a precipitous slope and saw three *homerus* and a few blossoms on a bush. I climbed up but they were out of reach, and after sitting for some time with my mouth watering, I gave up and started home. When I had gone a mile I stopped and began to reflect. I had found *homerus* at last. Why not stick to them until dark, so back I went. The same three were around the tree, and I sat far below in the path watching and slapping mosquitoes. I think I hypnotized them, for after a while one came floating slowly down through the air. I saw he was approaching the road, so ran to be just beneath him. When he reached the road he followed it for some 30 yards, I behind him, and at last he dipped down and I had him. In two hours I caught five more. I then had to return as the way was long and road rough. I came in done up but happy. The next day I was too sore to move, but the second day we packed up our camp cots and satchels and went up into the pass to a small cluster of negro huts within 1½ miles of our locality. We hired a hut at $1.00 a week, got servant 25 cents per day, chickens 25 cents a piece, bread, vegetables and eggs, and set in housekeeping. The morning we arrived I caught fine male *Pap. thersites*, the only one I got. We kept on up to my locality and got before 4 o'clock 6 more *homerus*. The next day, Sunday, July 13, we got 15, and July 14 got 6; on 15th it rained heavily and we got but 2. It rained every day and nearly all the time, but we caught them between showers. On night of July 15 we had 36—no females so far. Next morning my brother went down to Bath for mail, I up mountain alone, *homerus* hardly appeared before 8.30. I timed them this morning to see how often they appeared. Here is record. One at 8.40, first seen; one at 8.45, one 8.50, one 8.52, one 8.55, one 9.00, one 9.02, one 9.03, another 9.03, one 9.05, one 9.08, one 9.10, one 9.22, when I left to go to a better spot, as these were all out of reach and kept on out of sight. The mountain side was slippery from rain. I slipped and my heel was torn off and shortly after had another slip. Fell only two feet, but sat on sharp stake which penetrated my trousers, side of my leg, four inches up into my rectum and broke off. Of course for the first second I was sick, but got stick out easily and started back; lost considerable blood, but got to hut as my brother returned. Didn't have much pain but flowing of blood from rectum made me uneasy for fear of internal puncture, so thought best to keep on down to Bath before I got any worse. Walked along slowly and caught on way a female *Aganisthos orion*, so you can see "ruling passion strong in death," etc. Got to Bath, had chill and fever; young doctor came in and examined me; found I was badly lacerated, but nothing worse. I stayed in bed two days, but thoughts of those *homerus* pulled me out, and on July 19th back we went. Got that day only two, one a wretched female so battered that we did not keep her. I was too sore to run and my brother did all the work. The 20th we got seven, making 44 in all, one female among them, a total wreck, but I brought her along. That night I was awake all night, fever and great pain, and my wound discharging pus copiously; too much exertion I think. Anyhow, thought I had better leave at once; left at daybreak; drove that day 38 miles to Port Antonio and left next afternoon on steamer, reaching New York July 23. A doctor on the steamer fixed me up with carbolic wash, quinine, etc., so I was all right on landing, but pretty weak for some days.

The Seventeenth American Kermes (Coccidae).

By George B. King, Lawrence, Mass.

Kermes arizonensis N. sp.—Dead dry adult females globular variable in size, transverse diameter 3 and 5 mm. Color grayish white, distinctly marbled with a light yellow or reddish brown, and having four prominent linear transverse dark brown bands, somewhat wavy, due to quite large pits at intervals; surface not shiny; speckled with minute black dots. Dead dry half-grown individuals, dark red brown Antennæ apparently only 5-jointed; joints 1 (20), 2 (20), 3 (40), 4 (20), 5 (32) *u* long. Derm colorless. Rostral loop stout dark brown. Mentum small, no legs or other structural characters found.

Hab.—On oak at Prescott, Arizona, collected by Prof. T. D. A. Cockerell, March, 1902. (The species has gone as *Kermes galliformis* but has only been superficially compared. Ckll. in ~~litt.~~) It is, however, quite distinct from *K. galliformis*. In some of its markings it resembles *K. cuerœnsis* Ckll. described as a variety of *galliformis* which I believe to be a good species. *Arizonensis* is separable from *cuerœnsis* by its smaller size with distinct deep transverse brown bands with pits at intervals, and distinctly marbled with light brown. It is the second species of *Kermes* to be recorded from Arizona.

Since the publication of my paper on the *Genus Kermes of North America* in Psyche, vol. 9, p. 78-84, 1900, one other species has been described, viz.: *Kermes trinotatus* Bogue, taken at Stillwater, Oklahoma, on *Quercus nigra* and also found at Albany, N. Y., New Brunswick, N. J., and Atlanta and Tifton, Georgia, on *Quercus aquatica*. *K. pittiti* Ehrh. and *K. galliformis* Riley, have been recorded from Middletown and Brooklyn, N. Y. *Kermes andrei* King, has been found by Prof. Scott at Atlanta, Georgia, on *Q. stellata* and just recently I have received for identification from Prof. Cockerell, June 24, 1902, *Kermes pubescens* Bogue on *Q. macrocarpa*, and *K. andrei* King, on *Q. prinus* found at Columbus, Ohio, by Mr. J. A. Sanders, Westville, Ohio.

The following literature has also appeared:

Canadian Entomologist, vol. 32, p. 205, 1900, gives the description of *Kermes trinotatus* Bogue.

Bull. No. 26 N. Sr. U. S. Dept. of Agr., div. of Entom., p. 52, 1900, the species cited as a new species is *K. andrei* King.

Bull. N. Y. State Museum, No. 46, vol. 9, p. 356, 1901.

Some Notes and Descriptions of Three New Leptidae.

By Chas. W. Johnson.

Rhachicerus nitidus n. sp.

♂ ♀.—Face and front black, shining, except a patch of silvery white pubescence above the base of the antennæ and between the emarginations of the eyes, the indentation shining black; antennæ black composed of 22 joints, not pectinate in the ♀, and only slightly pectinate in the ♂, mouth parts yellowish. Thorax and abdomen black, shining, with yellowish microscopic hairs; humeri dull yellow; halteres and legs light yellow, the posterior tarsi somewhat brownish. Wings grayish hyaline, stigma brown, with a brownish tinge below, most conspicuous in the ♀. Length, 6 mm.

Two specimens, bred June 2, from larvæ obtained in a decayed log at Overbrook, near Philadelphia, Pa., April 17.

Larva yellowish-white and similar in general appearance to that of *Xylophagus abdominalis*, but much smaller (8 mm.). Pupa reddish brown, the antennal processes proportionately larger and curving backwards with a small anterior projection at the base of each, extending toward the center, but hardly meeting.

Xylophagus abdominalis Loew.

On March 20, 1897, I obtained at Riverton, N. J., from beneath the bark of a dead pine, in the early stages of decay, half a dozen larvæ, which proved, on reaching maturity (April 5) to be *X. abdominalis* described from Texas. Being placed in a small glass jar two of the larvæ pupated in a few days; while two showed their carnivorous habits by thrusting their sharp mouth parts into the other two. This act of cannibalism was probably forced upon them by being confined in such close quarters with no other food, as they usually feed on various wood-eating larvæ. The larvæ were represented by two sizes, the larger, which proved to be the ♀, was about 21 mm. in length, while the smaller, which developed into a male, was only 16 mm. Larva white, cylindrical, composed of twelve segments (including the head) and covered with a thin parchment-like skin; the three segments back of the pointed black head are chitinized above; entire in one, in others divided into two or three squares: the last segment has a chitinized plate above, terminating in two hook-like processes; at the bases of the fourth to the ninth segments are rows of transverse bristly pseudopods; similar rows of bristles are also present above; on the sides in the middle of each segment are tufts of three or four white hairs. (Fig. 1.)

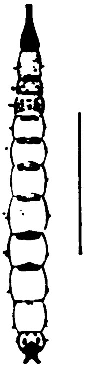
FIG. 1.

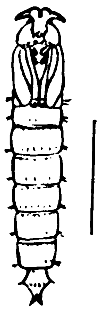
FIG. 2.

Pupa horn-color, the anterior end bearing prominent, annulated, antennal processes, while below the developing mouth-parts are also visible; on the thoracic section the developing wings and legs are folded on the sides and breast as distinctly as in a lepidopterous pupa ; the abdominal portion consists of seven segments, which have basal and sub-central rows of bristles, and dark brown shining spiracle nodes ; the end of the terminal segment is bispinose, with spine-like bristles on the sides. Length, ♀, 17 mm. ; ♂, 13 mm. (Fig. 2.)

Loew's description was based on a ♀, with which the New Jersey specimens agree in every respect except that only the second, third and fourth segments are red, the fifth being black ; a specimen from Michigan also has the fifth segment black. Length, 15 mm.

The male, which has not been described, differs from the female in having the abdomen entirely black and measuring only 11 mm. in length.

Xylophagus lugens Loew, was also bred from larvæ found in decayed oak and chestnut ; they resemble those of *X. abdominalis* except that one less segment is chitinized. The pupa has the antennal processes more recurved, lying close to the side of the cephalic portion, with a short hook-like spine, extending laterally from the base of each.

Xylomyia americana Wied., and **Xylomyia tenthredinoides** v. d. Wulp.

Xylophagus americanus Wied. Dipt. Exot. i, 51 ; auss. zw. i, 84.

Subula tenthredinoides v. d. Wulp. Tijdschr. voor. Entom. ii, 2 ser. 132, Tab. iii, f. 5.

On June 1 Mr. E. Daecke captured at Castle Rock, Delaware Co., Pa., a number of Xylomyiæ which has lead me to make a more careful study of the descriptions of *X. americana* and *X. tenthredinoides*. The specimens all lack a distinctive feature clearly given by Wiedeman, viz. : Middle of the first segment black, sides yellow ; the second and third segments red, with a posterior margin of yellow, in front of which is a short transverse line of black ; the remainder of the segments red, margined posteriorly with yellow. A ♀ collected by Mr. Chas. A. Voelker, at Clifton, Delaware Co., Pa., and a ♂ from Mr. R. J. Weith, Elkhart, Ind., agree with Weidman's description.

Xylomyia tenthredinoides has the first segment entirely black, or with the posterior half reddish and the remaining segments red without the yellowish posterior margin. In the ♀ a blackish lateral margin extends from the first to the fifth segments, evanescent on the latter; the outer half of the posterior femora and tibiæ are dark brown or black; on the dorsum of the thorax the two clearly defined yellow lines and lateral spots are wanting, while the humeri in the ♀ is black. Besides the specimens collected by Mr. Daecke, I have a specimen (♀) from Dr. W. A. Nason, Algonquin, Ill., June 9, and one (♂) collected at Natrona, Pa., July 12. The two species which have been united by Loew (Zeits. f. Ges. Naturw. xxxvi, 114) seem to be readily separated by the above characters.

Xylomyia aterrima n. sp.

♂, ♀.—Black, somewhat shining; a spot on each side above the base of antennæ and the frontal and facial orbits, whitish pubescent; antennæ black. Humeri, a lateral line extending to the base of the wing, post-alar callosities, middle of the scutellum, and a spot on each side of the metanotum (in the male) yellow. Halteres yellow with a brown spot at the base of the knob. In the male there is a slight trace of a posterior margin of dark brown on the segments of the abdomen. Legs variable, in the male the first and middle femora and tibiæ are yellow and in the female dark brown; hind femora of the female entirely black, basal half yellow in the male; outer half of the posterior tibiæ black; tarsi brown, basal half of the posterior metatarsi yellow; coxæ black, the posterior half yellow; in the male a greenish yellow tint seems to predominate. Wings brownish hyaline. Length, 12 mm.

The two specimens on which this description is based have been in my collection for a number of years. The ♂ from "N. Ill." was given me by the late Andrew Bolter, and the ♀ from Franconia, N. H., was collected by Mrs. Annie T. Slosson. I feel confident that a number of specimens would eliminate all discrepancies.

Symphoromyia cinerea n, sp

♂, ♀.—Entire body dull gray or ash-color, with short whitish and longer blackish pile, and with the lighter colored pile predominating in the male. Antennæ reddish or brown, the first joint moderately enlarged, grayish with long white and black hairs in the male, and short black hairs in the female, the small second joint noticeably darker than the others, third joint comparatively small in the male, no wider than the first joint, and in the female but slightly wider, aristæ black, mouth parts yellowish. Thorax with three obscure brownish stripes, the wide dorsal stripe divided anteriorly by a fine hair line, the sub-dorsal stripes divided at the suture forming two oblong spots, a small obsolete spot, also present above the base of the wing. Legs yellowish, all except the metatarsi dark brown, femora more or less brownish, especially in the male, halteres light yellow. Wings grayish hyaline, the stigma pale yellow, veins dark brown. Length, ♂, 5 mm.; largest ♀, 6 mm.

In woods at Goose Neck, Shrewsbury River, near Long Branch, N. J., June 9-12, 1902.

Vernacular Names Again.

By J. Chester Bradley.

Dr. Doran's interesting article in the November issue of the Ent. News, while of value in its aim to secure better English in writing vernacular names, has suggested to me the real absurdity of these names themselves. The aim of science is to be precise, and precision in designating an insect is amply secured by our system of latin nomenclature, with which the entomologist should rest content, using only such vernacular names for the lay understanding as have been thoroughly established by popular usage, and should not himself try to coin vernacular names for the masses to accept. Such words as mud-wasp, blister-beetle, potato-bug, bumble-bee and others that popular usage has sanctioned as good English words, are never in danger of being abused. But when the Entomologist tries to coin them he generally makes a dismal failure. Certainly anybody who is able to learn what insects are meant by such terms as *raspberry gouty gall beetle*, *red necked blackberry gall maker*, *red humped apple tree caterpillar*, and numerous others, will experience no greater difficulty in learning their only precise names—the latin ones—and to a person who is not acquainted with the insects meant, the names must seem absurd in the extreme. "What," such a one might wonder, "are the red necked blackberries, the red humped apple trees, and is the raspberry beetle truly afflicted with gout?"

Dr. Skinner calls my attention to the fact that Strecker described a Chalcid—*Smicra bimaculata*—in the Annual Rep. on Explor. and Surv., Dept. of the Missouri (Appendix SS to Rep. Chief Engineers for 1878). This species has heretofore escaped the notice of our cataloguers and recorders. Where is the type?—J. Chester Bradley.

ENTOMOLOGICAL NEWS.

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PHILADELPHIA, PA., JANUARY, 1903.

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Entomological Literature.

Ricerche sull' apparato di secrezione e sul secreto della Coccinella 7-punctata L. Pel Dott. ANTONIO PORTA. Con una tavola. Anatomischer Anzeiger, Jena, Oct. 24, 1902. Pp. 177-193.—In this paper Dr. Porta presents the results of a study of the nature, physiological action and source of the yellow secretion emitted by this Coccinella, when irritated, in both larval and adult stages. They disagree so much from previous ideas as to be worth noticing here. The secretion escapes by a fissure at the apex of each femur in the adult (as previously known), and by pairs of openings at some of the intersegmental abdominal articulations of the larva; it is orange-yellow in color, astringent and disgusting in taste, has a fresh pea odor; is soluble in distilled water, absolute alcohol and ammonia; insoluble in acetic ether, acetic acid, sulphuric ether, and chloroform; has a very sensible acid reaction; responds to Pettenkofer's test for bile acids, but not to Günzberg's or Boas' tests for hydrochloric acid, or to Gmelin's test for bile pigments; spectroscopically examined, it is described as approaching urobilin; microscopically studied, it contains numerous globules, granular and homogeneous bodies of various sizes and shapes, evidently on the way to dissolution. The weight of the secretion of one individual was determined by placing the beetle on filter paper, stimulating it, preferably by an electro-magnetic machine, and weighing the paper before and after; this precaution was necessary, as the liquid quickly evaporates. From a number of experiments the average weight of the secretion is given as .0026 gram. To obtain the secretion in solution in large quantities, a number of Coccinellæ (90-500) were placed in a definite quantity of water; the coldness of the latter, together with mechanical irritation by a forceps, caused a flow of the secretion. Hypodermic injections of such solutions always produced paralysis in frogs, tritons, guinea-pigs and rabbits, followed in some cases by death. Paralysis or death was proven, by appropriately arranged experiments, to be due to the effect of the venom on the medulla oblongata, not on the spinal cord nor on the heart, the latter in frogs continuing to pulsate after death. Relatively strong hypodermic injections into other insects produced temporary immobility but not death; living insects confined with living Coccinellæ were not affected sensibly, although there were numerous yellow stains on the box showing that the secretion had been emitted. It is hardly necessary to say that the quantities of secretion injected were greatly in excess of that produced by a single Coccinella. Coccinellæ offered to and swallowed by frogs were soon vomited.

As to the source of this secretion, and this is the most novel of his results, Dr. Porta completely disagrees with Leydig and others who asserted the secretion to be ejected blood. Finding that the mid-intestine likewise responds to Pettenkofer's test, he believes that the follicles situated in the meshes of a network of connective tissue between the musclefibres of the intestinal wall, produce the secretion. These follicles have been regarded by earlier authors as furnishing digestive juices; Dr. Porta finds them in all insects which he has examined. Ordinarily, he supposes, the product of these follicles is poured into the intestinal cavity, but when the insect is irritated the intestine is contracted "and the liquid which it contains passes into the cœlomic cavity (the walls of the intestine being porous) and thence escapes by the fissure described by Lutz, which is found in the articulation of the leg at the extremity of each femur." Other arguments which are cited in support of this view are that the swiftness of the blood current, as observed in transparent insect larvæ (e. g. Ephemerids), would preserve the blood from mixing in the cœlom with this expressed intestinal content; that the bodies in the secretion considered by Leydig to be blood corpuscles are mere accompaniments like salivary corpuscles in saliva; that the elasticity of the intestinal wall would permit passage of the intestinal contents through it; that when irritation of a Coccinella larva is prolonged, after the yellow secretion, there follows from the same apertures, "a black or greenish liquid, which is none other than the ingested material which has already undergone the first digestive modifications;" "finally the relation between the quantity of liquid secreted and the condition of the animal is easily shown, the biliary secretion being in correlation with the alimentary substances contained in the mid-intestine, there being none when fasting is prolonged."

From the physiological point of view the asserted existence of biliary acids in this insect is particularly interesting. Dastre and Florescq stated, as recently as 1898, "To our knowledge, biliary acids have never been met with in invertebrates whose hepatic secretion has been procured" (Archives de Physiolgie, Paris, xxx, p. 210). It may also be noted that Dr. Porta states "The isolated Malpighian tubes do not give Pettenkofer's reaction."—P. P. C.

CORRECTIONS.

Ent. News, Dec., 1902, p. 303, line 3 from bottom, for *Euhagenia* read *Euhagena*.

Ent. News, Dec , 1902, p. 318, line 6 from bottom, for Temple read Tempe.—T. D. A. Cockerell.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

The following visiting entomologists have recently been studying the collections of the American Entomological Society and the Academy of Natural Sciences of Philadelphia. Dr. Walther Horn, Berlin; Mr. Wm. Beutenmuller, New York; Mr. Rolla P. Curry, U. S. National Museum, Washington, D. C.; Mr. August Busck, U. S. Depart. Agric., and Mr. H. A. Ballou, Amherst, Mass.

Dr. L. O. HOWARD recently gave an interesting lecture before the Stille Medical Club of the University of Penna. His subject was mosquitoes in their relation to yellow fever and malaria.

A swarm of bees chased Willie, Till the boy was almost wild,
  His anxious parents wondered why the bees pursued the child.
To diagnose, they summoned their physician, Dr. Ives,
  "I think," he said, "the reason's clear, our Willie has the hives."
—WIDOW.

THE ELM LEAF BEETLE FOUND AT ITHACA, N. Y.—On July 13, 1902, Mr. P B. Powell, a student, discovered the egg shells, young and nearly full-grown grubs of what seemed to be *Galerucella luteola* on several elm trees along University Avenue, which leads to the Cornell campus from the city. The infestation was slight, only a few branches on a dozen trees being affected. On July 16th, Mr. Powell found the beetle, and on July 26th his larvæ pupated and the beetle emerged August 2d. We also reared some of the beetles August 7th. They were the genuine elm leaf beetle.

A second brood appeared on the trees in August. On August 23d Mr. Powell found eggs and young grubs, and on the 30th he got one of the beetles at an electric light. This second brood did not seem as numerous as the first one in July. It is reported that elms on Renwick flats, near the city, are also infested. The many elms which line the streets of Ithaca, the "Forest City," and especially the grounds of Cornell University, will afford fine pasturage for this serious pest if it thrives here as in the Hudson Valley.—M. V. SLINGERLAND, Cornell University.

"IM SO TIRED this morning," said the first moth.
"Up late last night?" asked the second.
"Yes," replied the first. "I was at a camphor ball."—*St. Paul Globe*.

I READ with interest Prof. Doran's article on compounding insect names in the November number of ENT. NEWS. I can agree with most of the author's statements and the concrete examples submitted.

There are two names in his list, however, which I would compound otherwise. They are "cigar-case bearer" and "pistol-case bearer." I think these are not in strict accordance with his rule 2. Both these insects are "case-bearers," that is caterpillars live in cases. One has a case shaped like a cigar and the other's case resembles a pistol in shape. Hence they are strictly "cigar-shaped case-bearers" and "pistol-shaped case-bearers," and their cases are not shaped like a "cigar-case," and in the case of the "pistol," it is not the "case" of the pistol that is referred to, but simply the pistol-shape of the caterpillar's case. I would now write them: "cigar case-bearer" and "pistol case-bearer," but in bulletins on both these insects (Bulletins 93 and 124, Cornell Experiment Station), I compounded the three words, thus: "cigar-case-bearer" and "pistol-case-bearer." To bring out the full meaning, as noted above, the word "shaped" should be compounded with the first word of the names. I now think the first hyphen, as used in the bulletins mentioned, is unnecessary.

I hope Prof. Doran will insist on the form, "codling-moth" and protest against the horticultural use of the form, "codlin moth."—M. V. SLINGERLAND.

Doings of Societies.

At the November meeting of the Feldman Collecting Social held at the residence of Mr. H. W. Wenzel, 1523 South Thirteenth Street, Philadelphia, eleven persons were present.

Mr. H. W. Wenzel enumerated some of the more important captures of his recent trip into the mountains of North Carolina.

Mr. Beutenmuller stated that the faunas of the Black and Blue Ridges of North Carolina were quite distinct, probably owing to a difference in the timber. He showed a wood-boring roach, and a probable new species of *Anthophilax*, both from North Carolina.

Mr. H. W. Wenzel referred to the similarity of the insect faunas of North Mountain, Pa., and the mountains of North Carolina.

Prof. J. B. Smith stated that he had bred twenty species of mosquitoes during the past season in New Jersey. But one New Jersey species, *Conchyliastes musicus*, is not known in the larval stage, but he suspected that a larva now in his possession may represent it. He spoke of a new species, *Culex melanurus*, from New Jersey. From sods, with the eggs of the salt-marsh species, from Anglesea, N. J., which he had kept dry and then placed in water, *Culex tæniorhynchus* only had been raised; but from sods from the same locality which he had kept wet, both *tæniorhynchus* and *sollicitans* emerged. *C. solicitans* is the common, and apparently the only, species found where the sods were gathered, and the speaker suggested the possibility of *tæniorhynchus* and *sollicitans* being forms of one species. He expected to investigate the matter more thoroughly next year.

In reply to Mr. Wenzel, Prof. Smith stated that he had bred five species from salt water, including one which, while distinct in the larval stage, cannot be distinguished from *Culex sylvestris* in the imago. Pools of water left by a high tide on the meadows on Sept. 4, were alive with larvæ on the 5th and 6th, showing that the eggs must have been deposited in dry spots previous to submergence. *C. sollicitans* always oviposits in dry places, the greater portion of eggs never reaching the adult stage.

Mr. Daecke exhibited a species of *Lachnus* which feeds on *Platanus occidentalis*, and had been found commonly in Philadelphia on September 18th, but on the 19th it had entirely disappeared.

WILLIAM J. FOX, *Secretary*.

The Chicago Entomological Society held a regular meeting Nov. 20th, 1902, in the John Crerar Library. Twelve members present. Visitor, M. E. Hoag. President Longley in the chair.

Mr. Melander and Dr. Williston were elected members.

The question of affiliation with the Chicago Academy of Sciences was brought up and discussed. It was agreed that no official action should be taken until more members were heard from.

The program for the evening was a talk by W. L. Tower, on the habitat of the genus *Leptinotarsa* Stahl, and the migrations of the Colorado potato beetle, *L. 10-lineata*. With the aid of a map he clearly and interestingly illustrated the spread of this beetle from its original habitat in the foothills along the eastern side of the Rocky Mountains to its fairly general distribution throughout the eastern half of the United States and Canada, except in the Gulf and South Atlantic States. Working its way eastward on its native food plant, *Solanum rostratum* it met, about 1859; the western spread of population, and with the Irish potato, *Solanum tuberosum*, in western Kansas. From that date it rapidly worked its way eastward, spreading as it advanced, northward into Canada and southward into the upper tier of Southern States, until in 1874 it had reached the Atlantic seaboard. Adjourned 9.55 P. M.

JOHN COMSTOCK, *Secretary*.

EXCHANGES.

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Specimens will be named under the following conditions: 1st, The number of species to be limited to twenty-five for each sending; 2d, the sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly; 4th, All insects must be mounted. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2-cent stamp with all insects for return of names. **Please put date of capture and exact locality on each specimen.** Before sending insects for identification, read page 41, Vol. III. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Lepidoptera.—Superb examples of *Hemileuca tricolor*, *Catocala chelidonia*, *babayaga*, *Pam. python*, *Apatura leila* and other extreme rarities in exchange for species of equal interest. O. C. Poling, Quincy, Ills.

Cocoons of *Samia Cecropia* to exchange for cocoons of other Lepidoptera. Mrs. J. M. McNamar, 2020 Franklin Avenue, Toledo, Ohio.

I will make collections in the Mississippi Valley of Diurnal Lepidoptera in exchange for specimens of other localities. C. H. Ross, Burlington, Iowa.

Lepidoptera.—North American Lepidoptera for exchange for other North American specimens new to my collection. Send lists to Otto Buchholz, 602 Adams Ave., Elizabeth, N. J.

Chionobas katahdin.—I have a few specimens to exchange for other rare Lepidoptera. Send list of rarities only. I most desire Bombycidæ, Sesiidæ, Cossidæ, Hepialidæ, etc.—H. H. Newcomb, 35 Court Street, Boston, Mass.

I have some specimens in papers of the rare and beautiful *Amp. versicolor*, and also live pupæ of *Paonias astylus* and *Sphinx eremitus*. Exotic and European butterflies to exchange for Native *Sphinx* and *Catocala*.—Chas. F. Timm, 131 Ralph St, Brooklyn, N. Y.

Lepidoptera —Rare North American *Catocala* in exchange for others of the same genus. Will also exchange other species and live pupæ for native and exotic Lepidoptera.—H. J. Erb, 322 E. 13th St., New York.

Lepidoptera.—Western and northern Argynnids especially desired, but will exchange for anything new to collection or for perfect specimens of less rare material. I offer *Chionobas œno. brucei*, *uhleri* and *chryxus*; *Colias meadii*, *alexandra* and *scudderi*; *Melitæa brucei*, *minuta*, etc. Also many Argynnids and local species of Catocalæ.—Arthur J. Snyder, Belvidere, Ill.

Wanted.—Live pupæ of all kinds of native Sphinx in exchange for good papered material as *A. angulifera*, *Sp. luscitiosa* and others. George Kircher, 573 Germania Ave., Jersey City Heights, N. J.

Lepidoptera.—Have many fine things from the West and South to exchange. Lists solicited. John & Hurd Comstock, 1572 Ridge Avenue, Evanston, Ill.

Lepidoptera.—I have 200 to 300 species to offer in exchange. Prefer mounted specimens. A. Kwiat, 701 Larrabee St., Chicago, Ill.

Lepidoptera —Wanted for cash or exchange. Living pupæ of North American Lepidoptera. Am. Ent. Co., 1040 De Kalb Avenue, Brooklyn, N. Y.

Lepidoptera. –Wanted pupæ of North American species for cash or exchange. American Ent. Co., 1040 De Kalb Ave., Brooklyn, N. Y.

Lepidoptera.—I desire exchange with collectors in all parts of North America, particularly Northwest and Southwest. No exotics. John L. Healy, 1137 Pratt Ave., Chicago, Ill.

I wish to secure, at once, specimens of all forms of *Satyrus alope* and *pegala* from all parts of U. S., accompanied by complete data Will give good exchange or cash. John L. Healy, 1137 Pratt Ave., Chicago, Ill.

Will exchange California specimens *Attacus ceanothi* cocoons, etc., for flies caught in other places that also inhabit California.—J. E. Cottle, 1520 Pacific Avenue, San Francisco.

Coleoptera.—Gustav Krech, Bartenstein, East Prussia, Germany, wants American Coleoptera in exchange for European.

Coleoptera.—Civillehrer Barkowski, Bartenstein, East Prussia, Germany, wants American Coleoptera in exchange for European.

Wanted.—Rept. Entom. N. J., 1899.—Rept. U. S. Dept. Agri., 1887. —Separata of articles on Hymenoptera; also *Cossus*, *Hepialus*, *Micropteryx*, *Cis*. *Cupes*, *Parandra*, *Rhyssodes*. ♀ of *Methoca*, *Myrmosa*, *Chyphotes;* Chrysids; Bees and Wasps, *Melanoplus collinus*, *rectus*, ♂ *punctulatus; Dictyophorus Asemoplus*, *Paratylotropidia*, *Haldemanella*, *Dactylotum*, *Ligurotettix*, *Morsea*.—W. H. Patton, Hartford, Conn.

Butterflies.—Good ones. From West Texas, Colorado and Missouri. One hundred species in duplicate. Also a few rare Catocalæ. Exchange for butterflies and Catocalæ of N. A.—G. M. Dodge, Louisiana, Mo.

N. A. Lepidoptera and their living pupa wanted. Will give in exchange exotic Lepidoptera.—Denton Brothers, Wellesley, Mass.

Will collect to order, next summer, insects of Guadalajara, Mexico.—J. F. McClendon, 3200 Guadalupe Street, Austin, Tex.

I have a complete set and index of Insect Life, also some odd numbers to exchange for works on Coleoptera not in my library.—L. H. Joutel, 164 East 117th Street, N. Y.

Lepidoptera.—I would like to exchange fertile eggs of *Catocala electa* and *nupta* for others of same genus.—Carl Ilg, 2539 Douglass Street, Philadelphia.

Lepidoptera—Odonata.—Wish to secure specimens of Butterflies and Dragonflies from North Carolina, of species not in my lists or collections. Correspondence invited —Franklin Sherman, Jr., Dept. Agr., Raleigh, N. C.

Wanted.—North American *Geometridæ*. eastern and southern species (many of the commonest). Offered Lepidoptera, Coleoptera and Hemiptera, many good species, from British Columbia.—Geo W. Taylor, Wellington, B C.

Catocala Andromache.—Will be supplied in exchange to a few of the larger collections while my duplicates last O. C. Poling, Quincy. Illinois.

Please Notice.—After October 15th, 1902. my address will be College Station, Brazos Co., Texas.—E. Dwight Sanderson.

Wanted.—Geometers, named or unnamed, in exchange; also noctuids and Microlepidoptera —Wm. H. Broadwell, 275 High St, Newark, N. J.

Lepidoptera.—I would like to correspond and exchange with some new beginners. I have live cocoons of *Telea polyphemus and Samia cecropia* to exchange for cocoons of others, especially cocoons of *Cynthia* and *Luna* moths.—J. N. Lang, 104 Bunker St, Chicago, Ill

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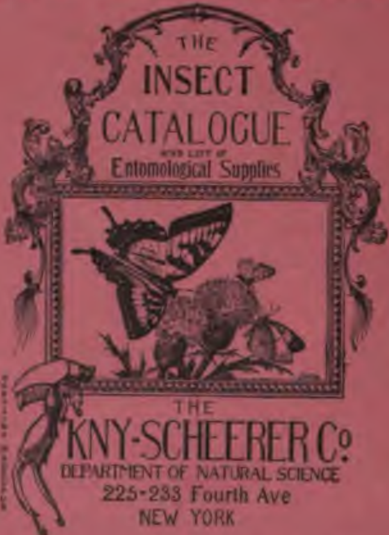

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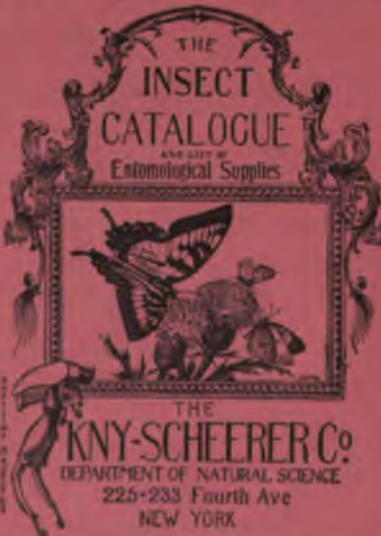

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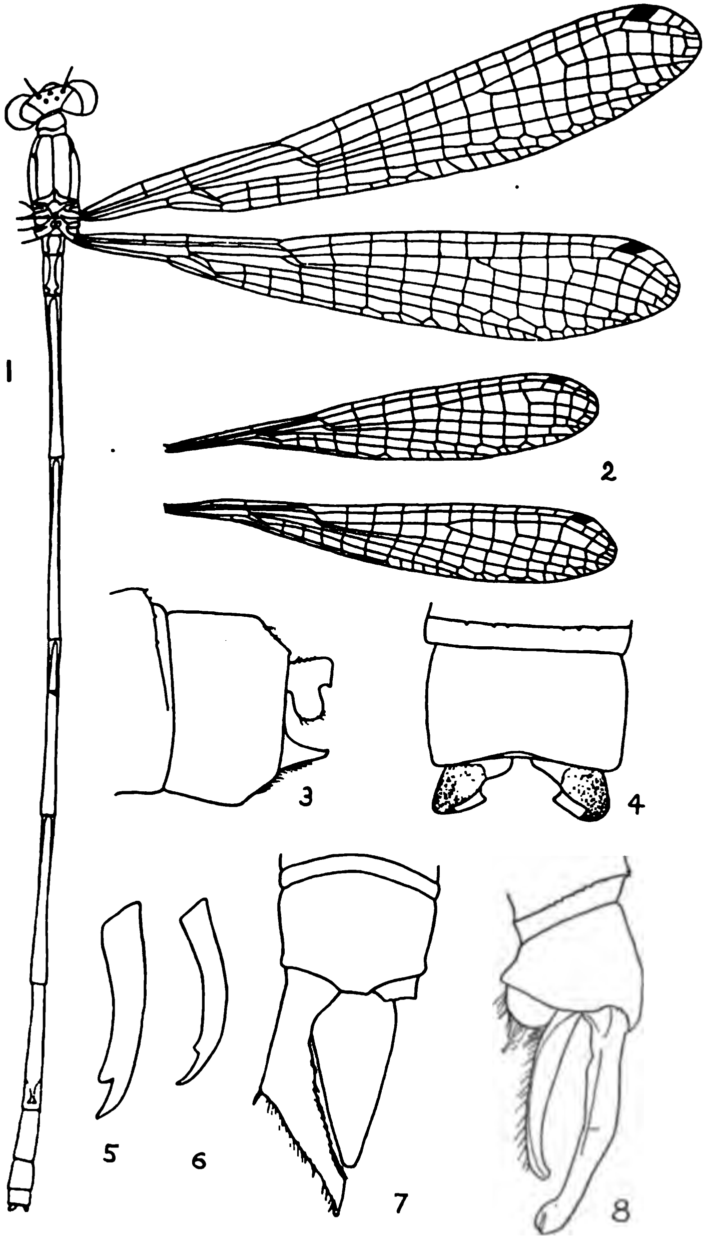

Figs. 1, 3-5, Telagrion? dæckii; 2, 6, T. longum; 7, 8, Somatochlora provocans.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

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Additions to the Odonata of New Jersey, with Descriptions of two New Species.

By PHILIP P. CALVERT, PH. D.

(With Plate III.)

The materials which have afforded the present paper are from two sources:

1. The collections made in Southern New Jersey by Mr. Erich Daecke, during the Summers of 1900–02. They are the source of all the additional species here added to the list I prepared for Prof. John B. Smith's "Insects of New Jersey" (Supplement to Ann. Rep. N. J. State Board of Agriculture, pp. 65–75, January, 1900).

2. A few species gathered by my wife and myself at or near Lake Hopatcong on the dividing line between Morris and Sussex Counties, Sept. 2–15, 1902. The most interesting of these were obtained in an unused wooden boathouse near Chestnut Point on the lake. Visiting this on September 14th, we found great numbers of exuviæ of Odonata and of large spiders; dead

teneral imaginal Odonata (as well as more or less crumpled detached Odonate wings) were entangled in the remains of spiders' webs. The open doors of the boathouse were on the north side, the opposite south wall was not so easily accessible from the water as were the east and west walls on which the exuviæ were chiefly found. On these two walls they reached to a height of twelve feet above the water. Each of these two walls had a single window in the middle, that of the west wall being closed, that of the east wall freely admitting light. We were not able to find any correlation in the distribution of the exuviæ with the relative amount and distribution of light.

We collected most of the unbroken Odonate exuviæ seen in this boathouse and I have identified them as follows: Agrioninæ 1 sp. 1 ♂ 4 ♀, *Gomphus* sp. (*sordidus* group) 4 ♂ 1 ♀, *Dromogomphus spinosus* 2 ♂ 2 ♀, *Didymops transversa* 4 ♂ 1 ♀, *Neurocordulia obsoleta* 15 ♂ 16 ♀, *Tetragoneuria cynosura* 8 ♂ 10 ♀, *Epicordulia princeps* 1 ♂ 4 ♀, in all 73. The almost entire teneral Odonata found in the remains of webs were *Dromogomphus spinosus* 1 ♀, *Neurocordula obsoleta* 1 ♀, and *Epicordulia princeps* 1 ♀; the abdomen of *D. spinosus* and the thorax of *E. princeps* had been partly eaten by something. The spiders' exuviæ have been kindly determined by Dr. T. H. Montgomery, Jr., as of *Dolomedes urinator* or *D. idoneus*. As the above-named Odonata are usually seen flying not later than July in this region, it is quite likely that the transformations had occurred long previous to our visit to the boathouse.

The general condition of affairs strongly suggested that the spiders had preyed upon the newly transformed dragonflies,* a possible explanation of the generally observed rarity of such a species as *Neurocordulia obsoleta* in the imago state as contrasted with the abundance of its exuviæ found here.

Prof. Needham has called attention† to a similar contrast in the genus *Ophiogomphus*, for which a similar explanation is perhaps to be sought.

---

* Years ago I observed young *Dolomedes sexpunctatus* feeding upon the soft parts of recently transformed imagos of *Ischnura verticalis* and *I.* (*Nehalennia*) *posita* which were not yet able to fly. Trans. Amer. Ent. Soc., xx, p. 205, 1893. See also McCook, Amer. Spiders and their Spinning Work, iii, p. 23, 1893.

† Can. Ent., xxix, p. 183; xxxi, p. 233.

ADDITIONS.

(Species new to the State list are marked * ; months and days are indicated by Roman and Arabic numerals respectively ; all unmarked records are due to E. Daecke, those marked C. to the writer, who has made all the identifications).

Calopteryx apicalis Burm. Iona VI, 8, 16.

Hetærina americana Fabr. Berkshire, Morris Co., IX, 12, C.

Lestes unguiculatus Hag. Minnisink IX, C. Da Costa VII, 20, 27.

L. forcipatus Ramb. Belleplain IX, 8.

L. vigilax Selys. Lake Hopatcong IX, 14, C.

L. inequalis Walsh. Riverton VII, 19, A. R. Satterthwaite.

Argia tibialis Ramb. Laurel Springs VII, 21.

A. apicalis Say. Laurel Springs VII, 21.

A. bipunctulata Hag. Clementon VI, 3, H. L. Viereck.

**Erythromma conditum* Hag. Iona V, 26, 1902, "everywhere."

**Nehalennia gracilis* Morse. Iona VII, 13.

Enallagma civile Hag. Manumuskin VI, 11.

E. carunculatum Morse. Lake Hopatcong IX, 5, 8, C.

E. traviatum Selys. Lucaston VII, 2.

E. geminatum Kell. Lake Hopatcong IX, 8, 14, C.

E. divagans Selys. Iona VI, 8.

E. signatum Hag. Lake Hopatcong IX, 6, C.; Bear Pond, Sussex Co., IX, 15, C.

E. pollutum Hag. Lake Hopatcong IX, 6, 8, 14, C.

* *Telagrion ? daeckii* n. sp. Manumuskin VI, 23.

* *Gomphus albistylus* Hag. (*nævius* Hag.) Lucaston VI, 13.

* *G. plagiatus* Selys. Manumuskin IX, 3.

Dromogomphus spinosus Selys. Lake Hopatcong IX, 14, exurviæ and dead imago, C.

Epiæschna heros Fabr. Manumuskin, VI, 11.

Boyeria vinosa Say. A male flying in a railroad passenger car between Bound Brook and High Bridge IX, 2, C.

Basiæschna janata Say. Manumuskin IV, 24.

Anax longipes Hag. An individual seen at Lucaston VI, 27 and VII, 2, 1902, by Mr. Daecke, was probably this species, judging from his description.

Epicordulia princeps Hag. Lake Hopatcong IX, 14, exuviæ and dead imago, C.

Tetragoneuria semiaquea Burm. Manumuskin V, 21.

* *T. spinosa* Selys. Clementon V, 3.

Helocordulia (*Neurocordulia*) *uhleri* Selys. Manumuskin IV, 24 ; Cumbberland Co., V, 5.

Neurocordulia obsoleta Say. Lake Hopatcong IX, 14, exuviæ and dead imago, C.

Dorocordulia (*Somatochlora*) *lepida* Hagen. Iona V, 26.

Somatochlora filosa Hag. Iona VIII, 25 ; Anglesea IX, 8.

S. provocans, n. sp. Da Costa VII, 16.
Tramea carolina Hag. Lucaston IX. 2; Alloway VIII, 25.
Libellula axillena var. *incesta* Hag. Bear Pond, Sussex Co., IX, 15, C.
L. semifasciata Burm. Laurel Springs VI, 3; Glassboro VII, 9.
Plathemis trimaculata De Geer. Manumuskin VI, 11.
Celithemis ornata Ramb. Lucaston IX, 2. Da Costa VII, 4.
C. elisa Hag. Manumuskin VI, 24.
**C. fasciata* Kirby. Lucaston VI, 27, VII, 2, "fifteen to twenty seen."
**Sympetrum albifrons* Hag. Belle Plain IX, 16, 1901, IX, 8, 1902, "on which day I took 15 ♂ and could have taken three times as many; they were very local;" Manumuskin IX, 15, 1902.
S. obtrusum Hag. Belle Plain IX, 8.
S. corruptum Hag. Several miles back of Barnegat VII, 25, 1900 (W. T. Davis in litt., Nov. 1, 1901).

With these additions the Odonate fauna of New Jersey now comprises 101 species and varieties distributed as follows: Calopteryginæ 3, Agrioninæ (*sensu Selysii*) 34, Gomphinæ 8, Cordulegasterinæ 1, Aeschninæ 10, Cordulinæ (*sens. Selysii*) 13, Libellulinæ 32.

DESCRIPTIONS OF NEW SPECIES.

Telagrion? daeckii, n. sp. (Pl. III, figs. 1, 3-5).

♂. Pale blue, with the following black markings: a mid-basal dot on the labrum, a pair of dots and a transverse basal line on the nasus, lines in the grooves on the vertex, some of which (together with a black transverse stripe across the rear of the head and a black stripe along each eye margin) enclose a pair of large triangular pale blue postocular spots; a pair of curved stripes on the middle prothoracic lobe, a mid-dorsal thoracic stripe hardly wider than the carina, a short stripe at the lower end of the humeral suture and a still smaller one at its upper end, these two connected by a narrow black stripe in the New Jersey ♂, a very short line at the upper end of the second lateral thoracic suture; a mid-dorsal stripe with some metallic green reflections on abdominal segments 1-6 for almost the entire length of each segment (except for a narrow, transverse, basal, pale blue ring on 3-6, which is also present on 7), widened anteapically on 2-6; a dorsal stripe on the basal three-fourths to four-fifths of 7, prolonged slightly farther toward the apex as a mid-dorsal line; a superior stripe on all the femora, and an anterior (external) line on the first tibiæ. The apex of 7 and all of 8-10 except the sternum of 8 are pale blue.

Hind margin of prothorax convex, entire, flattened slightly on each side instead of being equally curved throughout.

Third tibiæ with six well-developed spines on the anterior (outer) side. All the tarsal claws with a distinct tooth which is considerably smaller than the tip of the claw itself

Tenth abdominal segment less than half as long as 9, smooth and simple above, its hind margin with a wide but shallow concavity.

Superior appendages pale, black at tip, about half as long as 10; viewed from above, somewhat divergent, especially on the inner sides, with a small ante-apical denticle on the inner side; viewed in profile, the upper margin is straight, the apex truncated almost at right angles, upper apical angle slightly rounded, lower apical angle produced slightly downward as a minute point, lower margin of the appendage with an oblong process which is as wide and nearly as long as the appendage itself, projecting downward and slightly backward (caudad). Inferior appendages, viewed from below, produced on the outer side into a slender conical process which reaches as far backward as do the superiors and whose apex is acute and slightly upturned.

Wings hyaline; pterstigma brownish to blackish with a narrow linear yellow border immediately within the enclosing veins, surmounting less than one cell, costal margin the longest, proximal the shortest, distal and posterior subequal; arculus at the second ante-cubital, its upper limb slightly longer than the lower; upper side of the quadrilateral on the front wings less than half as long as the lower side, on the hind wings almost half as long as the lower side; inferior sector of the triangle arising at the submedian cross-vein (Florida ♂), or very slightly in front thereof (less than the length of the cross-vein, New Jersey ♂), and ending proximal to the level of origin of the nodal sector; superior sector of the triangle ending between the levels of origin of the nodal and ultra-nodal sectors; submedian cross-vein nearly mid-way between the levels of the first and second antecubitals; front wings with 12 (Florida ♂), 11 (N. J. ♂) postcubitals, the nodal sector arising nearest the sixth; hind wings with 9-11 postcubitals, the nodal sector arising nearest the fifth; ultra-nodal sector arising 3 (2 in one wing) cells proximal to the inner brace vein of the pterostigma on the front wings, two cells on the hind wings; three antenodal cells on all the wings.

Dimensions.—Abdomen 35-36.5, hind wing 21.5-23 mm.

Habitat.—Manumuskin, New Jersey, June 23, 1902, one male, by Mr. E. Daecke. Enterprise, Florida, May 18, one male, Museum of Comparative Zoology (Cambridge, Mass.).

Named for the active and enthusiastic collector who has added so much, during the last few years, to knowledge of the New Jersey insect fauna.

Provisionally, I refer this species to the Brazilian genus *Telagrion* Selys, for reasons given below; it may be that the discovery of the female will indicate other relationships. In making comparisons of this species with *Telagrion*, I have used Selys' descriptions* of course, and also two males of *T. longum* from Brazil, one of which bears the label "*A. longissi-*

---

* Bull. Acad. Roy. Belg, (2), xlii, pp.966-973. 1876.

mum" in de Selys' handwriting;* these two males are from the Museum of Comparative Zoology; both have lost abdominal segments 7–10. De Selys describes this species as having "Onglets obscurs à dent inférieure beaucoup plus courte que la supérieure;" I find the tooth of the tarsal claws represented only by a minute rudiment in these two males (see Pl. III, fig. 6).

In favor of the relationship of *daeckii* to *Telagrion* are the following agreements in structure (compare figs. 1 and 2, Plate III): (*a*) The shape of the pterostigma and the number of cells surmounted by it; (*b*) the shape of the quadrilateral; (*c*) the origin of the inferior sector of the triangle at the submedian cross-vein ("nervule basale post-costale" of de Selys, 1876), as well as (*d*) its termination proximal to the level of origin of the nodal sector; (*e*) the termination of the superior sector of the triangle between the levels of origin of the nodal and ultra-nodal sectors; (*f*) the number of postcubitals; (*g*) the presence of pale postocular spots; (*h*) the small number of spines on the outer side of the third tibiæ; (*i*) the great proportionate length of the abdomen and (*k*) the simple character of its tenth segment.

It is true that there are some disagreements with *Telagrion*, such as the differently shaped superior appendages of the male and the point of origin of the nodal sector (compare figs. 1 and 2, Plate III; de Selys gives no data on this last feature). I think, however, that these are not as great as the differences between *daeckii* and any other known genus which might be suggested, and I do not consider the erection of a new genus for *daeckii* justifiable on our present knowledge. Of the genera at present known from North America, one would probably think of *Enallagma* as furnishing the nearest relationship for *daeckii*, but the characters above marked *c*, *d*, *i*, are opposed thereto.

It may be well to repeat here de Selys' remark (*l. c.*, 1876, p. 967): "Il est possible qu'il faille encore subdiviser ce sous-genre [*Telagrion*], car les espèces du 1 er groupe [*fulvellum*,

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* *Longissimum* was a name employed by Hagen in his List of Neuroptera of South America (Syn. Neur. N. Am., p. 310. 1861), but without description. It is cited by de Selys (*l. c.*, 1876, pp. 970, 972) but abandoned for *longum*.

inversum, *longum*] sont chacune d'un type different sous le rapport de la proportion des appendices anals, et quant au *mecistogastrum* qui constitue le 2e groupe, il est encore plus caracterisé par son abdomen énormément long [50–52 mm. ♂, 37–39 ♀]."

Somatochlora provocans, n. sp. (Pl. III, figs. 7, 8).

♂. Most of the face, including the labium, yellow; free margin of the labrum narrowly edged with black, a pair of small black spots on the nasus; frons superiorly metallic-violet or -greenish-blue, which extends on to the anterior surface but does not reach the lower margin; the yellow on each lateral surface of the frons is consequently connected with its fellow of the opposite side by a transverse, inferior-frontal, yellow band; vertex metallic blue-violet, occiput and rear of the eyes black; labrum, occiput and rear of the eyes with numerous pale hairs, rest of the head (except the eyes) with many blackish hairs.

Front and hind prothoracic lobes very pale yellow almost white, middle lobe dark brown; hind margin of hind lobe convex, entire.

Thorax and abdomen dark metallic-violet or -green with the following yellow markings: upper end of mid-dorsal thoracic carina, anterior calli, inter-alar dorsal area, a rather wide but isolated mesepimeral stripe, a sinuous interrupted line just back of the metastigma, a fairly wide metepimeral stripe which passes on to the metasternum and unites with its fellow of the opposite side; a narrow line along the apex of abdominal segment 1; an oblique, inferior stripe each side at base of 2; a transverse apical stripe on 2 running out inferiorly on to the posterior margin of the genital lobe each side; a triangular spot on each side of the mid-dorsal line of 3, occupying the basal fourth of the segment. Conspicuous hairs on the thoracic dorsum and dorsum of first two abdominal segments (pale) and on the genitalia of 2 (dark).

Legs black with the following yellowish: most of the coxæ, first trochanters, most of the first femora except near the knees, second femora superiorly at base. Antero-inferior row of spines on all the femora terminating in a longer and stouter spine Not only do the first tibiæ have the inferior carina in their distal third, as described for the Cordulinæ generally by de Selys in 1871, but a similar pale inferior carina extends on almost the entire length of the third tibiæ.* The second tibiæ are not carinate in this manner.

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* Such a carina, which appears to be hollow within, exists on the third tibiæ of the males, but never of the females, of all species of Cordulinæ (*sensu Selysii*) which I have been able to examine. A similar carina is found also on the second tibiæ of species of *Didymops*, *Epophthalmia*, *Neurocordulia*, etc. Its nature and distribution deserve special examination.

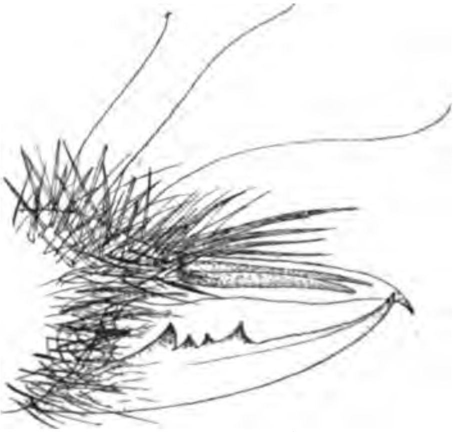
A New Genus of Solpugida.

By Nathan Banks.

Dr. Harold Heath, of Stanford Jr. Univ., has recently sent me an interesting new Solpugid from California that will not fit any of the known genera of this order. It differs markedly from the two genera that were previously known from this country, both in structure and in habits. By its structure it is probably nearest allied to *Ammotrecha*, but its diurnal habit reminds one of certain South African forms.

HEMEROTRECHA n. gen.

The male has an elongate flagellum consisting of two pieces lying along the inner side of the upper finger; upper finger (of ♂) without teeth; lower finger (of ♂) with several teeth on basal half; front margin of cephalothorax truncate; tarsi II. and III. of one joint; tarsus IV. of three joints, the middle one very short, all with large claws. Palpi short and stout, a few spines below on tibia and metatarsus. There are no series of spines above on metatarsi II. and III.



Jaw of *Hemerotrecha*.

This genus differs from *Ammotrecha* by the truncate front margin of the head, by the untoothed upper finger of male mandibles, and by the very elongate flagellum. It differs from *Gluvia* in the shape and position of the flagellum. The one's reach, only these two males are known to have been taken in ten years.

In the coloring of the thorax, this species approaches *S. filosa*; its appendages suggest those of *S. tenebrosa*; but *provocans* is manifestly quite distinct from these and every other described species.

EXPLANATION OF PLATE III.

Figs. 1, 3-5.—*Telagrion? daeckii* n. sp. ♂. 1, × 3½ ; 3 and 4, left profile and dorsal views respectively of the tenth abdominal segment and appendages × 20; the stippled parts in 4 represent the upper branch of each superior appendage ; 5, a third tarsal claw × 90.

Figs. 2, 6.—*Telagrion longum* Selys, ♂, Brazil, 2, wings × 3½ ; 6, a third tarsal claw × 90. **N. B.**—By an oversight the drawings of the wings in fig. 2 were misplaced so that the *upper* figure is that of the *hind* wing, the *lower* figure that of the *front* wing.

Figs. 7, 8—*Somatochlora provocans* n sp., ♂, dorsal and left profile views respectively of the tenth abdominal segment and appendages × 10.

All these figures have been drawn with the aid of the camera lucida.

Culex restuans Theobald.

By Harrison G. Dyar.

This mosquito was described from a single ♀ specimen, caught upon a window pane in Canada. It differed from *pipiens*, as pointed out by Theobald, in the presence of certain pale spots on the thorax and in the greater width and regularity of the abdominal pale bands. I have now a very considerable number of specimens of this form, and it appears that these characters do not always hold. The abdominal banding is quite characteristic of the females, but it does not serve to differentiate the males from the same sex of *pipiens*. The thoracic spots, when present, are decisive, but they often become small, rarely obsolete. Mr. Coquillett has carefully examined the specimens and has detected another character, namely, a short pale banding at the extreme ends of the hind tarsal joints, which is absent in *pipiens*, so that the species may be differentiated by this character when the others fail.

The larva separates itself from all yet known by having a long breathing tube and the antennal tuft before the middle of the joint. The other-long tubed larvæ have the tuft at or beyond the outer third of the joint. Another, more minute character, which can only be well seen in mounted specimens, is the peculiar shape of the mentum. It is unusually small, the sides long, straight, with only a few teeth, the apex low-triangular, with about 25 regular even teeth whose bases run deeply as grooves two-thirds the depth of the strongly chitinized portion.

I obtained such larvæ from cold spring pools in Center Harbor, New Hampshire; but they are not confined to such places. At Durham, N. H., I took them from a tub set in the woods for watering cattle, and at Cabin John, Maryland, from a pool shaded by bushes and even from rain puddles in the tow-path of the canal. Larvæ were sent me by Mr. J. Turner Brakeley of Lahaway, N. J., from his "*triseriatus* kettle," an old porcelain-lined kettle that had been left standing near his house. A specimen was bred also from an old tub on the grounds of the Department of Agriculture in the District of Columbia. This tub was swarming with *pipiens* larvæ and only the one *restuans* emerged from a lot of collected pupæ. It seems from the above that the larva occurs rathey widely distributed, but not in any great local abundance. It may be taken near houses, mixed in small proportion with *pipiens*.

The eggs are laid in floating, boat-shaped masses as in *pipiens*. The larvæ pass four stages as usual. They are to be found all summer and fall and very possibly may survive the winter in favorable situations. As to the habits of the adults, I have no data. The only captured specimen I have is a male taken by sweeping with the net. The probability is that the habits resemble those of *pipiens*, and the insect hibernates as adult. The species seems of small economic importance. I have not observed any specimens biting.

◆

THE ALSTEAD SCHOOL OF NATURAL HISTORY will open its fifth session on Tuesday, June 30, 1903. The school aims to give its pupils such acquaintance with living nature as comes only from systematic study, under competent leadership, *out of-doors*. The classes study at first hand the history written in the features of the landscape; the activities and adaptations of plants and insects; the haunts and habits of nesting birds. The knowledge gained in this way is real knowledge, and it lasts.—W. L. W. FIELD, Milton, Mass.

The Moths (Heterocera) of Eastern Pennsylvania.

BY PHILIP LAURENT.

The following list, although of a preliminary character, is nevertheless, as complete as it is possible to make it at the present time. No doubt future research will add many species to the list, as many species known to occur on the other side of Pennsylvania's boundary line will eventually be found in Eastern Pennsylvania. The Micro-Lepidoptera, for some reason or other, have been shunned by the majority of Pennsylvania "field workers," so that the list is rather small and represents but a small portion of the species that undoubtedly are to be found in this part of the State. In the present list I have only admitted such species of which I have positive proof of their occurrence in Eastern Pennsylvania, no species being listed on account of the fact that it is known to occur in adjacent States. It is hoped that the list will not only prove interesting, but useful, particularly to those who are interested in the geographical distribution. The basis for the present list is principally the collection of the Amer. Ento. Soc., and the material contained in my own collection. To Mr. Chas. Blake, Mr. James Johnson, Mr. Conradi, Dr. Henry Skinner, Prof. Chas. Johnson, Mr. Philip Nell and Mr. Frank Haimbach, who gave me free access to their collections, and assisted me in the preparation of the list, I am greatly indebted. To Prof. John B. Smith, Prof. Fernald and the late Rev. Geo. D. Hulst I am under great obligations for their kindness in identifying much of the material in my collection, and I take this opportunity to thank all of these gentlemen for kindnesses rendered. It is my intention to publish at no distant date a supplementary list, and I, therefore, request the reader to inform me of any inaccuracies that may be observed in the present list; which I think will prove to be but few and far between. No doubt many of the species marked rare are only rare in our collections, and when we learn when and where to look for them they will prove to be common enough. The list is arranged in accordance with Prof. John B. Smith's list of the "Lepidoptera of Boreal America."

Sphingidæ.

Hemaris tenuis *Grt.*, rare.
" diffinis *Bdv.*, rare.
" axillaris *G.* & *R.*, rare.
" thysbe *Fab.*, common.
" ruficaudis *Kir.*, rare.
Aellopos fadus *Cram.*
" tantalus *Linn.*, rare.
Enyo lugubris *Linn.*, rare.
Amphion nessus *Cram.*, rare.
Thyreus abbotii *Swains.*, common.
Deidamia inscripta *Harr.*, rare.
Deilephila lineata *Fab.*, common.
Choerocampa tersa *Linn.*, rare.
Philampelus vitis *Linn.*, rare.
" pandorus, *Hbn..*, common.
Philampelus achemon *Dru*, rare.
Ampelophaga chœrilus *Cram.*, rare.
Ampelophaga myron *Cram.*, common.
Ampelophaga versicolor *Harr.*, rare.
Dilophonota ello *Linn.*, rare.
" obscura *Fab.*, rare.
Protoparce celeus *Hbn.*, common.
" carolina *Linn.*, common.
Protoparce rustica *Fab.*, rare.
" cingulata *Fab.*, rare.
Sphinx kalmiæ *S.* & *A.*, rare.
" drupiferarum *S.* & *A.*, rare.
" gordius *Cram.*, rare.
" luscitiosa *Cram*, rare.
" chersis *Hbn.*, rare.
" eremitus *Hbn.*, rare.
" plebeius *Fab.*, rare.
Dolba hylæus *Dru.*, rare.
Chlænogramma jasminearum *Bdv.*, rare.
Ceratomia amyntor *Hbn.*, common.
" undulosa *Walk.* common.
Ceratomia catalpæ *Bdv.*, common.
Triptogon modesta *Harr.*, rare.
Smerinthus geminatus *Say.*, common.
Paonias excæcatus *S.* & *A.*, common.
Paonias myops *S.* & *A.*, common.
Cressonia juglandis *S.* & *A.*, rare.

Sesiidæ.

Melittia ceto *Westw.*, common.
Trochilium apiforme *Linn.*, rare.
" tibiale *Harr.*, rare.
Sannina exitiosa *Say.*, common.
Sesia pictipes *G.* & *R.*, rare.
" acerni *Clem.*, common.
" tipuliformis *Linn.*, common.

Thyridæ.

Thyris maculata *Harr.*, common.
" lugubris *Bdv.*, common.
Platythyris oculatana *Clem.*, rare.

Agaristidæ.

Alypia octomaculata *Hon.*, common.
Alypia lorquinii *G.* & *R.* rare.
Eudryas unio *Hbn.*, common.
" grata *Fab.*, rare.

Syntomidæ.

Lycomorpha pholus *Dru.*, common.

Pyromorphidæ.

Pyromorpha dimidiata *H.-S.*, rare.
Acoloithus falsarius *Clem.*, rare.
Acoloithus americana *Harr*, common.

Ctenuchidæ.

Scepsis fulvicollis *Hbn.*, common.
Ctenucha virginica *Charp.*, rare.

Lithosiidæ.

Nola ovilla *Grt.*, rare.
" melanopa *Zell.*, rare.

Hypoprepia fucosa *Hbn.*, rare.
Cisthene subjecta *Smith.*, rare.
Euphanessa mendica *Walk.* common.
Ameria unicolor *Rob.*, rare.

Arctiidæ.

Cydosia aurivitta *G.* & *R.*, rare.
Crocota rubicundaria *Hbn.*, rare.
" ferruginosa *Walk.*, rare.
" opella *Grt.*, rare.
" nigricans *Reak.*, rare.
Utetheisa bella *Linn.*, common.
" var. ornatrix *Linn.*, rare.
Callimorpha clymena *Brown*, rare.
Callimorpha lecontei *Bdv.*, rare.
Arctia virgo *Linn.*, rare.
" phyllira *Dru.*, rare.
" figurata *Dru.*, rare.
" decorata *Saund.*, common.
Arctia nais *Dru.*, common.
" phalerata *Harr.*, common.
Arctia anna *Grt.*, rare.
" virguncula *Kirby.*, rare.
" arge *Dru.*, rare.
Pyrrharctia isabella *S.* & *A.*, common.
Phragmatobia rubricosa *Harr.*, rare.
Leucarctia acræa *Dru.*, common.
Spilosoma virginica, *Fab.*, common.
Spilosoma latipennis *Stretch.*, rare.
" antigone *Strk.*, rare.
Hyphantria cunea *Dru.*, common.
Euchætes egle *Dru.*, common.
" collaris *Fitch.*, common.
Ecpantheria scribonia *Stoll.*, rare.
Halisidota tessellata *S.* & *A.*, common.
Halisidota caryæ *Harr.*, rare.

(To be continued.)

Collection Notes (Coleoptera).—1902.

By F. C. Bowditch.

Last year I captured at Dover, Mass., on red and black oak sprouts which had been killed by drought, about fifteen or twenty specimens of *Elytroleptus floridanus Lec.* All the specimens in my collection were from the South, and Messrs. Blanchard and Fenyes, to whom I gave specimens, were interested in its capture so far North. This spring I brought into the house some of the twigs on which I captured the beetles in 1901, and six imagoes hatched in April. On the 20th and 30th of May I paid visits to the same place and took upwards of one hundred specimens, most of them on the leaves. The weather, however, was most unfavorable and I failed to learn more of its habits.

Five examples of *Caliodes nobilis Say* occurred at Dover in June on oak stumps under the tender green sprouts which come from the stumps the first year after the tree is cut. The beetle is very lively, and upon being disturbed runs very rapidly and takes flight, and unless the collector be looking particularly for it, its chances of escape are good. My captures heretofore have been one every few years.

Five examples of *Melasis pectinicornis Mels.* occurred at Marion, Mass., on a dead branch of *tupelo*. I took them at three different times during a period of two weeks, from July 7th to 25th, and always on the same branch. Each time I captured them I went carefully over every other *tupelo* in the neighborhood, but failed to strike any other specimen on any other tree.

Perigora atriceps Lec. occurred sparingly at Marion during the latter part of July and first half of August—some ten or twelve examples being beaten from thick matted grapevine and brush. *Microscopha clavicornis Lec.* was also taken at the same time rather plentifully.

To Mr. Blanchard belongs the credit of separating from some *Agabi* captured by us (Messrs. Blanchard, Fall and Bowditch), the rare *Agabus planatus Sharp*. It occurred in company with *Agabus gagates* in the debris in the bed of a small brook at Marion, in August. Later, in September, I took a few more of both sexes. It is easily distinguished from its allies by its thickened thoracic margin.

It was a good season at Marion for Stylopized wasps, and one example observed had seven *Xenos peckii Kirby* in its abdomen. I got five ♂'s and a number of wasps with the ♀'s protruding.

Xylotrechus sagittatus Fab. was very plenty in Marion in September on *freshly* cut white pine. After the tree has been down ten days or two weeks the beetle seems to almost leave it for fresher material. With it occurred great numbers of *Monohammus confusor Kirby*. Both these beetles were to be found on the wood within a few hours after it was cut.

For a day or two in July *Harmonia 12-maculata Gebl.* with *14-guttata-similis Rand.* were rather common on white birch, and I obtained a very good series of eighteen examples showing variations of marking, etc. Heretofore my captures have been one or two examples in a season. Also two examples which are wholly rufous and which I unite with it with a ?. These latter occurred on red cedar later in July.

Tropistermus 4-striatus Horn were very abundant in brackish pools at the rear of the beach at Marion.

It seems to have been a good season both here and at Marion for Buprestidæ. At Dover I took an example of *Cinyra gracilipes Mels.* (always rare here) on white oak, and saw numerous examples of *Chrysobothris azurea Lec.* running in a particularly impracticable tangle of brush and grapevine where I had only a very few moments to vainly try for them. Later I saw the same species at Marion, and took also a specimen of *Actenodes acornis Say.*

My summer was, however, too much broken up to admit of new explorations which I had planned at Marion.

Some Entomological Notes.

By F. F. Crevecœur, Onaga, Kansas.

In my experience in collecting insects, during the past dozen years, I have made some observations or discoveries which I have never seen in print, and as they may prove helpful or of interest to others engaged in the same diversion, I herewith give them.

During the early summer months, when insect life is rich in an abundance of species—many of which to amateurs will prove to be new to their collection—one will have much success in capturing an abundance of specimens, often replete with rare forms, by beating the weeds, bushes, shrubs and low limbs of trees on the leeward side of a grove or of the natural forest along our streams, if a strong wind is blowing at the time. In June I have taken many good things along the north side of the timber when the wind was blowing so strongly from the south that it was almost useless to look for anything on the prairie or in the depths of the timber, where one would naturally look for a rich fauna. A couple of years ago I took quite a number of *Ptosima gibbicollis* in a grove of redbud trees standing along the north side of a cornfield, the bulk of the forest being at the north, while the wind was blowing strongly from that direction. The past summer I took a number of rare species on the weeds fringing the north side of a small stream, sparingly grown to trees, which runs nearly due east, the wind being from the south when my captures were made. Here I must record another observation, which perhaps partly accounted for my success the past summer. This fall I had occasion to beat the milkweed *Asclepias verticillata* for the beetle *Doryphora rogersii* and its larvæ. During the middle of the day I had no success at all, but near sundown, while getting the cows, I had the luck to capture one of the adult beetles and four of the larvæ. The next day I revisited the locality where my captures of the previous evening had been made, with the hope that I might take more specimens, but without success. Then I thought, perhaps, the time of day might have something to do with my capturing the beetle and its larvæ, so that evening I returned to the milkweed patch, and was rewarded with four additional larvæ. This set me to thinking why only at evening the species was taken, and I concluded that the species kept low down during the heat of the day, but when the sun had got low down and the dew commenced to gather on the lower grass the larvæ were driven from their retreat by the growing coolness caused by the gathering dew and climbed up higher where it was warmer. My captures along the stream, mentioned further up, were made near sundown, while getting the cows home, and I think the same cause was at work which made my collecting there so fruitful.

Riley, in his "Directions for Collecting and Mounting Insects," recommends the use of mucilage made of gum-shellac dissolved in alcohol, for mounting specimens on cardboard or pin-points. When I made my first attempt to dissolve some of the gum in alcohol, I was fortunate in making a perfect solution of the gum, with which I mounted many of my earlier specimens. After the lapse of a year or so, my mucilage had evaporated so much that it had become too thick for use, and I put in a little alcohol to thin it when, instead of becoming more fluid, it seemed to curdle and became unfit for use. I tried to prepare a new supply by using fresh gum, and was again disappointed, as the the gum instead of dissolving assumed a jelly-like state, which was useless for my purpose. I made several other attempts to make a supply of the shellac mucilage, but always without success. In desperation, I wrote to several prominent entomologists for information as to the cause of my shellac not dissolving as it should, and in each instance my inquiries were ignored. I concluded that the entomologists were as ignorant as I as to the cause of the gum acting so contrary. Finally, something told me that the alcohol I was using contained a too great percentage of water, which prevented the dissolving of the gum, so I decided that at the first opportunity I would secure some absolute alcohol to experiment with. Last summer I had the fortune of securing a small quantity of the pure alcohol, and at the first occasion I used it to dissolve some of the gum was happily surprised to see how easily the gum was dissolved into a perfectly liquid mucilage.

I am sure I am not the only one who has seen the work of years in collecting reduced to a dirty mass of fragments and powder by the ubiquitous larvæ of some Dermestid beetle. I had tried many different plans for preserving my specimens—some recommended by older entomologists—such as moth-balls, corrosive sublimate, etc., and some of my own devising, such as lining the edges of my boxes with cotton to prevent the entrance of the pests, but all to no avail, as I often found to my chagrin, that in spite of all I did, the rascals would have the contents of some box which I had not recently opened reduced to ruins. When the hydrocyanic-gas treatment for scale insects came into vogue, I bethought me, perhaps, this method of exterminating insects might be used to advantage in preserving our cabinet specimens, and this summer I have put the method to practical trial and, so far, have found it an almost perfect success. For my specimens in cigar boxes,* I put a number of the boxes in a lard can, such as are used to ship lard from the packing-houses to the retailer, and then get all the ingredients ready, using a teacup to hold the solution, keeping the cyanide in readiness to drop into the solution in one hand and the lid to the can in the other, so as to quickly place it over the can the moment the cyanide is dropped into the sulphuric acid and water. To disinfect cases which are too large to put in the lard cans, I have the bottom of a small bottle which easily will go into the case with the glass over it, and proceed in the same way as when using the lard can, only one must be careful to gauge the quantity of the solution to the size of the glass, as the least quantity overflowing when the cyanide is dropped in will ruin pins and specimens with which it comes in contact.

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* The trouble is caused by faulty boxes.—EDITORS.

The beetle giving me about the only trouble is *Trogoderma tarsale*, which here seems to be two-brooded. The time that I find most successful to exterminate their larvæ is about the first of May and the fifteenth of August. Perhaps a little earlier for each brood would be as well, but in either case it should be done before they change to adults.

A Day's Experiences.

By A. J. Snyder.

We didn't think it rained in Colorado in July and August, but the past summer seems to have been exceptional everywhere. Our experiences during eight weeks in camp and field were such that we thought somewhat seriously of offering our services to the State as rain-makers, for it rained wherever we went.

The history of what befel us July 18th, 1902, in Colorado is also exceptional, but there were other days no less moist and many ideal.

It had rained the previous day, and cloudy weather had spoiled parts of several days before. As we looked away across the mountains it seemed to rain nowhere so frequently as in the little gulch at the head of the valley where we had camped, just at timber line. We therefore decided to make one more heroic attempt to add to our collection of the species which we found so abundant here and then move camp down the valley. We were up early and had soon completed our culinary duties, filled our pockets with the necessary boxes and lunch and had started up the trail. What I have called a gulch resembled a great basin with rugged peaks ascending on three sides, some of them to a height of 12,000 feet or more. These peaks all sloped back from the rim of the basin, and when one finally reached their tops he found great sloping plains, somewhat tilted, to be sure, and covered with grasses, mosses and rocks. These mountain table lands always reminded us of the descriptions of the tundras or the moor-like expanses so common in Arctic America.

We started early, hoping to reach the summit in time to see the morning sun awaken the insect world. As we entered a little valley upon which the sunlight rested, and were a short distance beneath the top, we found the first awakening insects, *Colias meadii* and *Parnassius nanus*. After pausing a moment here, we followed a miner's trail on up among the rocks, where on one hand it was almost perpendicularly up and on the other down, with the path, a mere line, to separate the two perpendiculars. We were soon in the midst of a wilderness of rocks and winding ever upward, stopping now and then for breath, and on one or two projecting points waving a farewell to the camp—now a dot in the distance marked by two white spots—our tents. We next came to a dividing ridge and could look over on the farther side into another valley, with range after range of mountains in the distance and snow-capped summits everywhere, for what had been rain in camp the day before had been snow and ice a little higher. We paused upon a ledge some ten or twelve feet wide with almost straight descent on either hand. Just beyond a great rock rose, and in its shelter we crouched to escape the wind from the peaks beyond and above us and to enjoy the few moments of sunshine which instantly change these frigid regions into pleasant collecting grounds. Here we found butterflies also enjoying the shelter of the rocks and flitting about the arctic flowers. *Lycæna shasta*, *Colias meadii*, *Parnassins nanus* and *Chrysophanus snowii* like such places. Just above us on the slopes of the higher peaks is the home of *Chionobas* and *Melitæa*. Almost immediately clouds began to appear and the sunlight came to us only at rare intervals. We determined, however, to complete the ascent, and were soon finding frozen butterflies resting on the vegetation, and when the sunlight reached these chilled insects we saw them begin slowly to flit from place to place. In our pathway and on the sheltered side of rocks we found Arctias too cold to move. A few minutes later we were upon the moor and the wind was searching every opening in our clothing and chilling us to the marrow. There were no rocks whose shelter we might seek here, but as we still had hopes of sunshine we bent our heads and pushed on, now and then starting a *Chionobas* which, carried by the wind, never stopped until it fell below the mountain crest and could rest in some sheltered nook. We sought out hollows in the earth, and dropping into them lay upon our backs trying to get warm. Near one of these shelters we found two old ptarmigans with their young and caught two of the little birds—beautiful creatures, like young chickens—and watched them until we could no longer endure the mother's anxiety and plaintive calls for her brood, then laughed to see them scurry away and imagine themselves hidden when they squatted in full sight among the scant vegetation.

The clouds became thicker, and when we could no longer endure the cold we decided to go back to the steep side of the range and descend into the gulch above camp hoping, if the sun came out, to find *Erebia magdalena* in the slide rock. It took but a few minutes to gain the protection of the rocks at the edge and to start upon our way down over the half mile or more of slide rock, where we did not dare to walk in a line for fear the ones above might dislocate rocks, which would go hurtling down upon those below.

The sun finally broke through the clouds and a few butterflies started to life at once. Within the rim of the basin is an old mine with a bin built for the storing of ore, and upon the floor of this bin we lay and enjoyed the reflected heat of the sun until some of the chill had departed, then worked on around the rim until in another great area of slide rock we suddenly started a *magdalena*. How one longs for these black beauties as he sees them flying royally away, moving so easily over the great fields of loose rock where one misstep may mean a broken limb. We were fortunate this morning, and three *magdalena* were taken. Then we found *Chrysophanus snowii* among some of the larger rocks and all heartily entered into the pursuit. A quick eye, an accurate stroke and knowledge of just what to do next is essential here.

All unknown to us, and while we worked in the sunlight within the rim of the basin, a storm had been brewing, and we were unconscious of its approach until the edge of a great black cloud appeared over the rim, the sun disappeared, and snow flakes began to fall. Camp was more than a mile away, and no trail led downward. There was a hasty consultation, and then we began to let ourselves down almost in a bee line for camp. Then we ran, making our way through dwarf bushes, seeking places to cross the streams which came from the great snow banks above, and every moment the snow was coming down more rapidly. Fortunately the breath comes more easily in going down than up a mountain, and a few minutes brought us to camp. Safe in the shelter of our tents we watched the storm until the ground was white with snow.

In half an hour the sun shone, the snow began to melt and we at once packed up outfits and prepared to move down the valley a little over two miles into the shelter of the pine forest. Going up our mule team had exerted every muscle, stopped frequently, and on the steepest places there had been a man at each hind wheel. Going down was toward home, and the rocks were many, the mules frequently raised the driver from his seat as he braced his feet, applied the brake and threw his weight upon the reins. Ere we had gone a mile another cloud peeped over the rim of the basin and emptied its contents upon us. We reached the site of our new camp in the midst of a hard rain. Wood was abundant, but wet, and a campfire was impossible. We were not long in pitching our tents, getting all the bedding inside and starting the little sheet-iron stove to roaring with dry branches from the depths of the forest underneath trees so dense the rain seldom penetrated.

Huddled around the small stove we dried our soaked shoes, prepared a warm supper and then crawled into our beds to get warm. Next morning when we awoke warm and comfortable we touched the canvass of the tent and found it frozen stiff. On stepping outside we found the ground frozen, and as we looked back up the valley our former camp was white with snow. A roaring campfire soon made all within its reach a scene of comfort, and when Old Sol came over the mountains and peeped into our valley, cold, damp, discomfort, restlessness and snow disappeared at his magic touch. That, however, is another story and another day.

Bombus Gelidus Cress, Bombus Kincaidii Ckll.

BY H. L. VIERECK.

By request of Prof. Cockerell, I have compared the types of the above and a ♂ *gelidus* determined by Prof. Cockerell. Believing them to be distinct, I submit the following tabular arrangement of the different characters:

kincaidii.	*gelidus.*
♀	♀
Flagellum thicker, first joint one-fourth its length longer than the second.	Flagellum more slender, first joint one-third its length longer than the second.
Pale, pubescence absent on vertex.	Pale pubescence present on vertex.
Segments 1-2-3 of abdomen entirely covered with pale pubesence, the hair on the remaining segments almost black.	First abdominal segment with pale pubescence, second and third segments each with two patches of brown pubescence, which almost form a transverse band, some black hairs to the sides and the front of these patches, fourth segment with pale hair, interrupted in the middle by a patch of black hairs; apex of abdomen with dark, almost black hairs.
♂	♂
Flagellum thicker, first joint a little longer than the second, but not distinctly. Abdomen almost entirely covered with pale hairs, some black hairs mixed with the pale ones on the apical half.	Flagellum more slender, first joint distinctly longer than the second, about one-fourth its length. First segment of abdomen with pale hairs, second and third segments with brownish hairs, the rest of the abdomen with pale hairs mixed with black, except laterally where they are pale.

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and, as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form, will be given free, when they are wanted; and this should be so stated on the MS., along with the number desired. The receipt of all papers will be acknowledged.—ED.

PHILADELPHIA, PA., FEBRUARY, 1903.

HOW VALUABLE WORK MAY BE DONE.

Too much importance is given to established names by beginners and collectors. Many are in a position to find out the comparative value of specific names in the literature. There is one caution, however, and that is on no condition should a name be put into the synonymy until its identity with another name is proven beyond a doubt. It is a mistake also, to sink a name without the fullest explanation of the reasons, therefore, a catalogue or a mere list, is not a proper place. As examples of how good work may be done the following are cited. An entomologist in Georgia says he believes *Satyrus pegala* and *alope* are one and the same species, and asks our opinion. According to our present state of knowledge the presumption is that they are different. They do not fly in the vicinity of Philadelphia and they are common in Georgia. We respectfully invite and request our Georgia friend to put the matter on a scientific basis for all time. It is also probable that *Terias jucarola* and *delia* are the same species. They should be separately listed until proven the same. A few days ago an entomologist wished to know the difference between *Anisota senatoria* and *virginiensis.* He said one of these species had been found by him in the imago state in New Jersey by the thousand. Here was an opportunity lost. He should have collected some hundreds and studied the individual variations. Have we two species in these two names? How can the males be separated? How can the larvæ be differentiated? Does one represent a seasonal brood of the other? There are many interesting problems in regard to our butterflies and moths that can only be accurately solved by studies in the field by persons living where the species in question are abundant. The biological studies are most interesting, and the student of these problems should prove or disprove the work of the closest naturalist, who is governed by what he sees, and if he has the "*mihi itch*" there is no telling what he may see. It is hopeless to expect the systematic worker to put genera like *Cicindela* or *Argynnis* on a firm footing, and yet the individual who lives where the things fly, depends on the systematist for names, or at best does not give the latter the benefit of knowledge which the field worker could or should readily acquire.

We received $1.00 mailed on January 11th from Washington, D. C. The subscription blank was not filled out. Please send your name and receive credit.

Mr. Merrick's plate of *Haploa* in the last NEWS should be an object lesson to the Sloppydopterist.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

QUEER CAUSE FOR DIVORCE.—Wife says her husband made her catch bugs.—Because her husband forced her to catch bugs, although she was deathly afraid of them, Mrs. Fanny Welch, of Baltimore, Md., sued for a limited divorce. At the time of their marriage Mr. Welch was in the employ of the United States Geological Survey. While in Dennison, Tex., Mrs. Welch said, her husband took a notion to collect beetles, centipedes, tarantulas, and all sorts of bugs and insects. Despite her horror of such things, he would make her go with him and help to catch them. He would keep the insects in their room, she said, and when they escaped at night he would compel her to catch them. The court granted her a decree.—NEWSPAPER.

I HAVE just completed a preliminary revision of the species of *Nonagria* and would be glad to see material from all sections of the country prior to publication. Will name and return promptly all specimens sent me by correspondents.—JOHN B. SMITH, New Brunswick, N. J.

NEW MEXICO is a fine place in which to collect insects, and if you don't think the following doggerel is a base slander, consult **PROF. COCKERELL**:

> " And the Devil said it was all he needed
> To start a new Hell, and then he proceeded.
>
> He scattered tarantulas along the roads,
> Put thorns on the cactus and horns on the toads.
> He mixed up the sand with millions of ants,
> So those who sit down need half-soles on their pants,
> He lengthened the horns of the Texas steer,
> And put an addition to jack-rabbit's ear.
>
> He quickened the step of the broncho steed,
> And poisoned the feet of the centipede.
> He put Juajalota in all the lakes,
> And under the rocks hid rattlesnakes.
> The wild boar roams through the chapparell,
> It's a mighty poor place he's got for a hell."

IN THE NEWS for December I notice that at the meeting of the Harris Club in Boston, several members reporting having seen *Vanessa milberti* near Boston during October. It may be of interest to know that the insect was also seen in Providence. I captured a fine specimen on October 19, 1902, in my flower garden, hovering over the blossoms. The insect appeared to be entirely fearless, settling down on the flowers beside me as I was picking them for a bouquet. This is the first I have ever taken or seen in the few years that I have been collecting, and I should judge it is rather uncommon in this locality. Mr. E. D. Keith also reports taking one a few days before in his garden.—JAMES E. BILLSON, Providence, R. I.

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Doings of Societies.

A meeting of the Chicago Entomological Society was held in the John Crerar Library, December 18, 1902.

Nine members were present. Mr. Longley in the chair.

Mr. Kwiat, treasurer, reported a balance of $23.08 on hand.

President Longley read a review of the Society's progress for the year, which was heard with much interest.

It was moved by Mr. Adams that the Society affiliate with the Chicago Academy of Natural Sciences. Mr. Kwiat voted the motion out of order, on the ground that it disagreed with the constitution, which states that such action could not be taken without previous notice having been sent to each member.

It was duly moved and seconded that action be postponed until the January meeting and notice be given by the secretary. Passed.

A resolution was presented by Mr. Kwiat and passed by the Society extending thanks to the John Crerar Library for the comfortable and pleasant room provided for its meetings. On account of the lateness of the hour election of officers was postponed until the January meeting.

JOHN COMSTOCK, *Secretary.*

The Entomological Society of Washington, at its 174th regular meeting, on Thursday, January 8, 1903, elected the following officers: President, D. W. Coquillet; first vice-president, Nathan Banks; second vice-president, A. D. Hopkins; recording secretary, R. P. Currie (re-elected); corresponding secretary, Frank Benton (re-elected); treasurer, J. D. Patten (re-elected); executive committee, the foregoing officers and H. G. Dyar, L. O. Howard (re-elected), and C. L. Marlatt (re-elected).

At the December meeting of the Feldman Collecting Social, held at the residence of Mr. H. W. Wenzel, 1513 S. 13th St., Philadelphia, ten persons were present.

Mr. Busck stated that most of the types of *Tineidæ* described by Clemens had been found in the collection of the American Entomological Society. It had been supposed that these types were lost or destroyed, and the present discovery will prove of great value to students of the group.

Prof. Smith spoke of a similar discovery of the types of Grote and Robinson.

The probable spread of the gypsy moth was discussed by Messrs. Smith and Ballou. Mr. Ballou referred to a former report of the appearance of the moth in Connecticut, but on investigation the report was found to be incorrect.

Dr. Castle, on behalf of Mr. Bland, reported that a large *Sphinx* was captured on October 24 in Philadelphia, having apparently just emerged from the chrysalis.

Prof. Smith showed a map of New Jersey illustrating the distribution of the periodical cicada. The various broods in New Jersey were dwelt on, and their position described. The brood during 1902, abundant in the northern counties, did not occur in South New Jersey, except in spots where the brood of 1894 did not exist.

Mr. Daecke stated that *Tettigea hieroglyphica* was very abundant at Da Costa, N. J., in July, 1901, but was quite scarce during 1902.

In reply to Mr. Daecke, Prof. Smith said there are two forms of *Cicada septendecim*, the typical, and a smaller form called *cassini*, the latter having quite a different note from the larger one.

Cicada septendecim was further discussed by Messrs. Smith, Wenzel, Daecke, Busck, Laurent and Johnson.

Mr. Laurent exhibited eleven species of *Sphingidæ* collected at Miami, Florida, during latter part of April and early in May. He called attention especially to *Darapsa porcus*, *Hemeroplanes pseudothyreus* and *Thoxates pergesa*.

Mr. Laurent reported that Mr. Wm. Davis had raised *Tenodera sinensis* on Staten Island from egg-masses sent him some time ago.

Prof. Smith said that he had distributed egg-masses of this species in New Jersey, and the insects had since been reported in various localities in the State.

Mr. Johnson exhibited some *Leptidæ* on which he had been working. Particulars will be found elsewhere in the NEWS.

WILLIAM J. FOX, *Secretary*.

The sixth regular quarterly meeting of the Pacific Coast Entomological Society was held on the evening of November 15th at the residence of Dr. F. E. Blaisdell, 1800 O'Farrell Street, San Francisco.

President Fuchs in the chair. Ten members responded to roll call. Six visitors were present.

It was decided to obtain entomological literature for the Society by the sale or the exchange of insects.

James Cottle read a paper titled "My trip to Shasta," giving a list of his captures, as follows: *Argynnis monticola* and *purpurascens; Melitæa palla, whitneyi* and *leanira; Vanessa californica; Satyrus*, two new forms; *Chionobas californica; Thecla californica, grunus, halesus, sæpium* and *nelsoni; Lycæna heteronea, pulla, dædalus* and *anna; Neophasia menapia; Colias chrysomelas; Parnassius clodius* and *smintheus; Pamphila comma* and a new form; *Hemaris cynoglossum; Nisoniades perseus; Sphinx sequoiæ; Epicallia ochracea; Arctia ornata; Pyrrharctia isabellæ; Pseudohazis eglanterina* and *shastensis* variations and aberrations of the same.

Dr. E. C. Van Dyke read a very interesting account of the collectors and collections he met and studied while recently visiting the Atlantic Coast.

Dr. F. E. Blaisdell read a paper upon Capt. Casey's "Revision of the Coccinellidæ," with criticisms and suggestions for the remedy of certain difficulties encountered in applying the same.

Mr. F. W. Nunenmacher exhibited a collection of *Coccinellidæ* and species of other families; Mr. Edw. Ehrhorn a collection of Coleoptera from Bolivia, S. A.; Mr. F. Grinnell a box of Lepidoptera collected at Pasadena. Social discourse.

Adjournment.

F. E. BLAISDELL, *Secretary*,
1800 O'Farrell St., S. F.

The November meeting of the Newark Ent. Society was held November 9, 1902. It was called to order by President Buchholz, thirteen members being present. Visitor, Mr. Richard Barth.

Election of officers resulted as follows: Mr. Angelman for president, Mr. Stortz for vice-president, Mr. Buchholz for secretary, Mr. Seib for treasurer, Mr. Brehm, curator of Lepidoptera; Mr. Dickerson, curator of Coleoptera; Mr. Broadwell, librarian.

Prof. Smith reported that *Sphinx catalpæ* had made its way east as far as the Atlantic Ocean. He also reported in regard to mosquitoes that Mr. Brehm has discovered three new species between the Passaic and Raritan Rivers. Meeting adjourned. GEORGE STORTZ, *Secretary pro tem.*

The December meeting of the Newark Ent. Society was held December 14, 1902, President Angelman presiding. Fifteen members present. Visitors were Mr. Schaeffer, of Brooklyn, and Mr. Keller, of Newark. The minutes of the previous meeting were read and approved.

Prof. Smith reported for Mr. W. T. Davis, of Staten Island, the capture of specimens of *Homoglæa carnosa* at Lakehurst, N. J., on huckleberry, the autumn colored leaves of which it most beautifully mimics, this species being new to New Jersey. Also *Catocala herodias*. Time of capture, September. Prof. Smith gave a little lecture on mosquitoes, and requested the members to catch for him during winter all the specimens they can find in cellars and woodsheds to ascertain what species hibernate as adults, very little being known about this point.

Mr. Dickerson exhibited a box of mounted mosquitoes, containing all the known species of New Jersey.

Prof. Smith consented to give a lecture on mosquitoes before an invited public in Newark, under the auspices of the Society.

A committee of six—Messrs. Herpers, Seib, Angelman, Broadwell, Dickerson and Brehm—was appointed by the chair to procure suitable quarters for same. Adjournment

OTTO BUCHHOLZ, *Secretary.*

The meeting of the Newark Ent. Society was held at Turn Hall, January 11, President Angelman presiding, and eleven members present.

The minutes were read and adopted.

Mr. Kearfott spoke about finding larvæ of *Tineidæ* in the stalks of plants during winter.

and Conservator, Henry Skinner ; Secretary, C. W. Johnson ; Publication Committee, C. W. Johnson, J. H. Ridings.

HENRY SKINNER, *Recorder*.

A meeting of the American Entomological Society was held December 18, 1902. Dr. Calvert, president, in the chair. Eighteen persons were present. The president announced the death of M. Tosquinet, the president of the Entomological Society of Belgium on October 20, 1902.

The Curator exhibited the Clemens types of Tineina as arranged by Mr. August Busck. It was unanimously voted to extend the thanks of the Society to Mr. Busck for this valuable piece of work.

Mr. Bradley exhibited under the microscope the mouth parts of the Ichneumonid, *Agathobanchus æquaticus* Say. The labium has a tubular form like that of a bee.

Mr. Rehn exhibited a new Locustid from Costa Rica, representing a new genus and species. The characters of the venation were given. He also showed a new species of cricket from Albuquerque, New Mexico. Two specimens of *Temnopteryx major* from Chestertown, Md., were exhibited. The species has hitherto been unique.

Mr. Johnson showed specimens of *Acrocera*, and spoke of the larvæ living in abdomens of spiders. *Acrocera fasciata* Wied. had been reared from *Lycosa stonei*. Many spiders, perhaps 25%, are thus parasitized. Mr. Johnson said the specimen exhibited by Mr. Bradley was taken by himself on flowers.

The following persons were elected to serve as officers for 1903 : President, P. P. Calvert ; Vice-president, H. W. Wenzel ; Treasurer, E. T. Cresson ; Curator, Henry Skinner ; Recording Secretary, Henry Skinner ; Corresponding Secretary, C. W. Johnson ; Librarian, J. C. Bradley ; Executive Committee, P. Laurent, H. W. Wenzel, C. W. Johnson ; Finance committee, J. W. McAllister, C. S. Welles, D. M. Castle ; publication committee, E. T. Cresson, C. F. Seiss, B. H. Smith.

HENRY SKINNER, *Secretary*.

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Wanted.—Live pupæ of all kinds of native Sphinx in exchange for good papered material as *A. angulifera*, *Sp. luscitiosa* and others. George Kircher, 573 Germania Ave., Jersey City Heights, N. J.

Lepidoptera.—Have many fine things from the West and South to exchange. Lists solicited. John & Hurd Comstock, 1572 Ridge Avenue, Evanston, Ill.

Lepidoptera.—I have 200 to 300 species to offer in exchange. Prefer mounted specimens. A. Kwiat, 701 Larrabee St., Chicago, Ill.

Lepidoptera—Wanted for cash or exchange. Living pupæ of North American Lepidoptera. Am. Ent. Co., 1040 De Kalb Avenue, Brooklyn, N. Y.

Lepidoptera.—Wanted pupæ of North American species for cash or exchange. American Ent. Co., 1040 De Kalb Ave., Brooklyn, N. Y.

Lepidoptera.—I desire exchange with collectors in all parts of North America, particularly Northwest and Southwest. No exotics. John L. Healy, 1137 Pratt Ave., Chicago, Ill.

I wish to secure, at once, specimens of all forms of *Satyrus alope* and *pegala* from all parts of U. S., accompanied by complete data. Will give good exchange or cash. John L. Healy, 1137 Pratt Ave., Chicago, Ill.

Will exchange California specimens *Attacus ceanothi* cocoons, etc., for flies caught in other places that also inhabit California.—J. E. Cottle, 1520 Pacific Avenue, San Francisco.

Coleoptera.—Gustav Krech, Bartenstein, East Prussia, Germany, wants American Coleoptera in exchange for European.

Coleoptera.—Civillehrer Barkowski, Bartenstein, East Prussia, Germany, wants American Coleoptera in exchange for European.

Wanted.—Rept. Entom. N. J., 1899.—Rept. U. S. Dept. Agri., 1887.—Separata of articles on Hymenoptera; also *Cossus*, *Hepialus*, *Micropteryx*, *Cis*, *Cupes*, *Parandra*, *Rhyssodes*. ♀ of *Methoca*, *Myrmosa*, *Chyphotes*; Chrysids; Bees and Wasps, *Melanoplus collinus*, *rectus*, ♂ *punctulatus*; *Dictyophorus Asemoplus*, *Paratylotropidia*, *Haldemanella*, *Dactylotum*, *Ligurotettix*, *Morsea*.—W. H. Patton, Hartford, Conn.

Butterflies.—Good ones. From West Texas, Colorado and Missouri. One hundred species in duplicate. Also a few rare Catocalæ. Exchange for butterflies and Catocalæ of N. A.—G. M. Dodge, Louisiana, Mo.

N. A. Lepidoptera and their living pupa wanted. Will give in exchange exotic Lepidoptera.—Denton Brothers, Wellesley, Mass.

inasmuch as the latter was scarcely collected over except in the eastern part, whereas New Jersey had been much more thoroughly investigated. He also referred to the accepted view by army officers that yellow-fever is only contracted by the bite of *Stegomyia fasciata*, yet the epidemic of 1793 in Philadelphia occurred in a region where the insect is absent.

Prof. Smith stated that the unusually dry period then existing would tend to cause streams to form puddles or breeding places for mosquitoes; and that the fever may have been due to another species of mosquito, possibly *Culex triseriatus* which resembles the *Stegomyia* very closely and therefore might be capable of transmitting the disease.

Mr. Johnson stated that he had found *Culex triseriatus* only in puddles.

Mr. H. W. Wenzel pointed out that in 1793 there existed about Philadelphia no doubt many more pools and other breeding places for mosquitoes than at the present day.

The following resolution was ordered incorporated in the minutes :

Resolved, That while the Feldman Social feels that it should congratulate its President, Mr. C. W. Johnson, upon his election to the Curatorship of the Boston Society of Natural History, it does so with regret, because it feels that his departure from Philadelphia will be a distinct loss to Entomology in this city.

Resolved, That we place upon record our sincere regard and esteem for him as a man, as an entomologist and a companion, and bespeak for him all the success in his new field which his abilities deserve.

Resolved, further, That he be placed on the list of the honorary members of this Society.

Mr. Johnson thanked the Society for its kind wishes.

The following officers were elected for the ensuing year: *President*, Mr. Charles Boerner ; *Vice-President*, Mr. Erich Daecke ; *Secretary*, Mr. Wm. J. Fox ; *Treasurer*, Mr. H. W. Wenzel.

WILLIAM J. FOX, *Secretary*.

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N. A. Lepidoptera and their living pupa wanted. Will give in exchange exotic Lepidoptera.—Denton Brothers, Wellesley, Mass.

Will collect to order, next summer, insects of Guadalajara, Mexico.—J. F. McClendon, 3200 Guadalupe Street, Austin, Tex.

I have a complete set and index of Insect Life, also some odd numbers o exchange for works on Coleoptera not in my library.—L. H. Joutel, t64 East 117th Street, N. Y.

Lepidoptera—Odonata.—Wish to secure specimens of Butterflies and Dragonflies from North Carolina, of species not in my lists or collections. Correspondence invited.—Franklin Sherman, Jr., Dept. Agr., Raleigh, N. C.

Wanted.—North American *Geometridæ*. eastern and southern species (many of the commonest). Offered Lepidoptera, Coleoptera and Hemiptera, many good species, from British Columbia.—Geo. W. Taylor, Wellington, B C.

Catocala Andromache.—Will be supplied in exchange to a few of the larger collections while my duplicates last. O. C. Poling, Quincy, Illinois.

Please Notice.—After October 15th, 1902 my address will be College Station, Brazos Co., Texas.—E. Dwight Sanderson.

Wanted.—Geometers, named or unnamed, in exchange; also noctuids and Microlepidoptera.—Wm. H. Broadwell, 275 High St., Newark, N. J.

Desired.—Pupæ and perfect specimens of North American Lepidoptera, for cash or exchange. The Kny-Scheerer Co., Department of Natural Science, 225-233 Fourth Ave., N. Y. City, N. Y.

Notonectidæ and Aquatic Hemiptera.—Wanted from New York State especially; and in general from the United States. Write me stating what you want in return. J. R. de la Torre Bueno, 437 Central Park West, New York.

Lepidoptera.—I have *Thecla spadix*, *Calephelis nemesis*, *Lyc. sornorensis*, *Pamphila errans*, *Hemaris thetis* and other California butterflies to exchange for *Lycænidæ* and *Bombycidæ*. Fordyce Grinnell, Jr., Box 1031, Palo Alto, California.

Aphides.—I desire to obtain living aphides or plant lice. Can give named or unnamed Massachusetts insects of any order except Lepidoptera in exchange. C. T. Brues, Zoological Laboratory, Columbia University, New York City.

For Exchange.—Coleoptera of Southwestern Penna., in sets of four, with data for Coleoptera or Lepidoptera. Send lists, T. N. Brown, Uniontown, Pa.

Wanted.—Cerambycidæ Longicorns of the Americas. State number, price and locality. Fred. C. Bowditch, 164 Rawson Rd., Norfolk Co., Mass.

Coccids and Bees.—Correspondents are requested not to send me specimens for identification without first asking permission. My time is very limited, and I cannot work up all sorts of miscellaneous material.—T. D. A. Cockerell, East Las Vegas, N. M.

Pupæ Exchange.—Crysalids of H. Maia and others; also cocoons to exchange for other native pupæ and cocoons. W. T. Buxton, 152 Walnut St., Somerville, Mass.

Wanted.—Cocoons *Attacus angulifera*, *ceanothi*, *gloveri*, *A. luna*, *E. imperialis*, to exchange for butterflies and moths. *Catocala* in papers from Illinois.—Adolf Mares, 1671 W. 23d St., Chicago, Ill.

Wanted, by purchase or exchange, photographic prints and lantern slides illustrative of insect life.—W. L. W. Field, Milton, Mass.

Diptera.—*Rhamphomyia* of the world wanted. Will exchange for Texas or Illinois insects (not Lepidoptera).—A. L. Melander, The University of Chicago.

Tortricidæ, Tineidæ and **Pyralidæ.** I will identify specimens of these subfamilies, from all N. Am. localities, for privilege of examination and records. Genera and specific names per Dyar's Catalogue. Will also exchange. W. D. Kearfoot, 114 Liberty St., New York, N. Y.

Wanted.—December, 1890, Entomological News. Address F. W. Friday, 17 Grace St., Pittsburg, Pa.

Wanted. *Catocala* and *Sphinx* of the Northwest and Southwest in exchange for other native exotic and European butterflies and moths. Send list to Chas. F. Timm, 131 Ralph St., Brooklyn, N. Y.

Exchanges solicited in moths, butterflies of N. America. Catocalas preferred. Send lists to Jos. H. Reading, 775 N. Rockwell St., Chicago, Illinois.

Lepidoptera from all parts of the world to exchange for species not in my collection. Frank Haimbach, No. 1300 Allegheny Avenue, Philadelphia, Pa., U. S. A.

North American Butterflies wanted in exchange for Lepidoptera of Southern California.—P. H. Hart, Pasadena, Cal.

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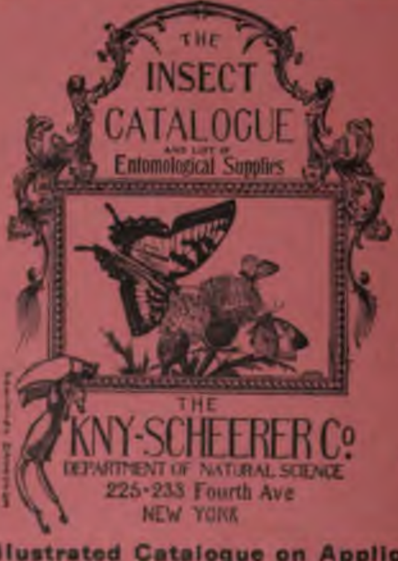

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Vol. XIV. No. 4

ENTOMOLOGICAL NEWS

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APRIL, 1903.

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PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XIV. APRIL, 1903. No. 4.

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Synopsis of Sphecodinae.

BY CHARLES ROBERTSON, Carlinville, Illinois.

This paper belongs with one on Andreninae, in Trans. Am. Ent. Soc., xxviii, 187-194, June, 1902, and another on Halictinæ, in Can. Ent., xxxiv, 245-250, Sept., 1902, intended to put the results of my studies of the local bees in a more convenient and definite form.

The species of this group fall into several generic divisions. In the group of larger species, in which the male has the fourth joint of the antennæ long, the majority agree fairly well in structure with *Sphecodes gibbus*, which I regard as the type, and are referred to the same genus. *S. falcifer* Pttn. is made the type of the new genus *Drepanium* on account of the simple mandibles of the female. *S. ranunculi* Rob. is proposed as the type of the new genus *Proteraner*. The male has the abdomen broadly rounded at apex and entirely red, except sometimes at the base. It differs from all of the other species, and from all of the Halictinæ, from the fact that the male appears in spring with the female.

In the second group, in which the male has the fourth joint of the antennæ hardly longer than the third, the species whose females have the mandibles dentate are referred to the new genus *Stelidium*, with *S. cressonii* sp. nov. as the type, and those with simple mandibles are referred to *Machæris* gn. nov., type *S. stygius* having the vein *rm* present and the clypeus convex, and *Dialonia* gn. nov., type *S. antennariæ*, having that vein absent and the clypeus flat or a little concave.

In the paper on Andreninae, cited above, I have mentioned thirteen species in which I have found the vein III_3 wanting. I neglected to mention the absence of vein *rm* in one wing of a single specimen of *Trachandrena claytoniae*. In the Sphecodinæ, on the other hand, I have found the vein *rm* absent in thirteen specimens of the following species: *S. falcifer* (1), *pimpinellæ* (3), *cressonii* (2), *stygius* (2), *antennariæ* (5). One of the last has the vein III_3 wanting in one wing and is the only example with that vein absent.

Sphecodium cressonii is the insect I have identified as *S. mandibularis*. Specimens sent to Mr. Cresson were determined as *Sphecodes* sp., from which it is evident that he did not regard the species as *S. mandibularis*. The structure of the mandibles of that species is unknown. *Machæris illinoensis* is based on a specimen with simple mandibles described as a cotype of *S. prenanthemi*. The males of *S. heraclei*, *pimpinellæ* and *antennariæ* are here described for the first time. The male of *S. arvensis*, described as "entirely black, antennæ submoniliform" and *S. falcifer*, described as "entirely black" are here characterized for the first time.

S. dichrous Sm. is probably based on the female of *S. arvensis* Pttn. and the male of some other species, and *S. confertus* Say may be the same as *S. falcifer* Pttn., but at present I prefer to use Patton's names.

In this paper cell III = second cubital cell; vein *rm* = the first transverse cubital nervure; vein III = the second transverse cubital nervure; "joint" refers to antenna, "segment" refers to abdomen; "enclosure" = the enclosed space on the disc of metathorax.

In my opinion these bees are inquilines of the Halictinæ and the genera here recognized will be found to infest the nests of different genera of that subfamily.

FEMALES.

Mandibles yellowish or reddish, the tip darker ; small or middle sized, 3.

Mandibles rufous, base usually largely black ; large or middle sized, 1.

1. Mandibles simple ; labrum long, strongly notched ; mesonotum closely punctured ; segments 4-5 more or less black ; vein *rm.* short **Drepanium falciferum.**

Mandibles dentate ; labrum short, rounded or truncate . . . . . . 2.

2. Joint 4=2+3, or nearly ; abdomen narrow, evenly, coarsely, distinctly punctured, entirely red, segment 5=4, or longer ; clypeus finely and densely punctured : mesonotum coarsely and closely punctured ; cell III strongly narrowed above. **Proteraner ranunculi.**

3. Mandibles dentate. . . . . **Sphecodium.**

Mandibles simple . . . . 4.

4. Vein *rm* wanting ; clypeus short, flat ; mandibles long ; mesonotum shining, greenish, finely and sparsely punctured ; metathorax short, enclosure poorly defined, with longitudinal raised lines. **Dialonia antennariæ.**

Vein *rm* present ; clypeus longer, more convex . . . . . **Machaeris.**

MALES.

Joint 4 longer than 2+3, which are equal ; abdomen red, except sometimes at base, apex broadly rounded . . **Proteraner ranunculi.**

Joint 4 hardly longer than 3 . . . . 2.

Joint 4 about equals 2+3 . . . . 1.

1. Joint 3 twice as long as 2 ; flagellum notched beneath towards apex ; mesonotum closely punctured ; mandibles red ; vein *rm* short ; abdomen black, segment 7 red, at least at apex. **Drepanium falciferum.**

Joint 3 not twice as long as 2 ; vein *rm* little shorter than III . . **Sphecodes.**

2 Clypeus ; vein *rm* wanting ; metathorax smooth, shining, with some longitudinal raised lines . . . . **Dialonia antennariæ.**

Clypeus convex ; vein *rm* usually present. . **Sphecodium** or **Machæris.**

SPHECODES Latr.

FEMALES.

Vertex with a distinct tubercle ; mesonotum closely and coarsely punctured ; abdomen finely and sparsely punctured, segments 4-5 black. . . . . **heraclei.**

Vertex ordinary . . . . 1.

1. Abdomen rather evenly, coarsely and distinctly punctured, segment 5 more or less black ; clypeus and mesonotum sparsely punctured, the former a little more coarsely ; cell III$_3$ short, its sides parallel . . . . **arvensis.**

Abdomen, at least segment 1, impunctate or nearly so . . . . . . 2.

2. Mesonotum shining, sparsely punctured, not sulcate, sometimes with a median raised line ; abdomen entirely red, almost impunctate . . . . **minor.**

Mesonotum less shining, more closely punctured, strongly sulcate ; segment 5 black, 2-5 rather distinctly punctured basally. **clematidis.**

MALES.

Flagellum submoniliform, without distinct facets beneath ; abdomen red, segments 3-6 more or less black . . . . **clematidis.**

Flagellum with joints 4-13 notched beneath and presenting distinct facets; abdomen entirely black . . . . 1.

1. Vertex with a distinct tubercle ; mesonotum with coarse confluent punctures ; abdomen more shining, less closely punctured, apex thinly pubescent . . . . **heraclei.**

Vertex ordinary ; mesonotum with punctures less coarse, more distinct ; abdomen more opaque, more closely punctured, more closely pubescent . . . . **arvensis.**

SPHECODIUM.

FEMALES.

Flagellum, mandibles, tibiæ, tarsi and abdomen red ; head and mesonotum closely and finely punctured ; cell III$_3$ very short ; enclosure short, semicircular . . . . **pimpinellæ.**

Flagellum, tibiæ and tarsi darker . . . . 1.

1. Enclosure distinct, coarsely reticulated ; labrum entire ; mesonotum usually greenish, shining ; segments 4-5 usually black. **cressonii** sp. nov.

Enclosure short, poorly defined, with longitudinal raised lines ; labrum more or less emarginate ; mesonotum black . . . . 2.

2. Abdomen entirely black ; slender . . . . **smilacinæ.**

Abdomen red, except segments 4-5 ; robust . . . . . . **pycnanthemi.**

MALES.

Enclosure short; scutel closely punctured, rather opaque; abdomen without red ; vein *rm* wanting in known specimens . . . **pimpinellæ.**

Enclosure longer; scutel sparsely punctured, shining; abdomen more or less reddish; fresh specimens compared with *Machæris stygia* have the pubescence longer, whiter, more dense, especially on clypeus; antennæ, tegulæ, nervures and reddish color of abdomen, when present, paler; mesonotum anteriorly, pleura and metathorax less coarsely reticulated . . . . . . **cressonii.**

MACHÆRIS.

FEMALES.

Head rather coarsely and closely punctured; enclosure distinct, coarsely reticulated; segments 4-5 usually black . . . . **stygia.**

Head rather finely and sparsely punctured; metathorax short, enclosure poorly defined, with longitudinal lines; robust. **illinoensis** sp. nov.

MALES.

Resembles the male of *S. cressonii*; the pubescence shorter, more cinereous, thinner, especially on clypeus; antennæ, tegulæ, nervures and reddish color of abdomen, when present, darker; mesonotum anteriorly, pleura and metathorax more coarsely reticulated . . . . **stygia.**

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Two New Species of the Family Pipunculidae.

By C. W. Johnson.

Pipunculus pallipes, n. sp.

♂. Face and front black; autennæ brown, aristæ black. Thorax and scutellum bronze-black, shining; humeri dull yellow; pleura and metanotum black, covered with a grayish pubescence. Abdomen ovate, shining bronze-black, with the sides of the second, third and fourth segments yellow, which on the second segment is nearly double in extent to that on the two following segments: first segment gray, opaque; ventral surface of the second, third and fourth segments entirely yellow. Legs and halteres light yellow, the two last joints of the tarsi brown. Wings long, hyaline, stigma brown. Length 3½ mm., length of wing 4 mm.

Wildwood, N. J., August 27, 1901.

This resembles *P. lateralis* Macq., by the light yellow, not annulated legs and greater extent of yellow on the sides of the abdomen. The latter character distinguishes this species from all described American species.

I might here state that *Pipunculus houghi* Johnson in the Catalogue of Insects of New Jersey, p. 665, is only a *nomina nuda*, an accident happening to the specimen before it was described. Later Dr. C. Kertesz (Wiener Entom. Zeitung, XIX, 244, Nov., 1900) has applied the same name to *P. lateralis* Walker 1856, *non* Macquart 1834.

Nephrocerus daeckei, n. sp.

♂. Face and front black, covered with a silvery white pubescence;

occiput with white pubescence and hairs; antennæ entirely light yellow, aristæ black. Dorsal portion of the thorax a shining black; humeri, lateral margins, pleura and scutellum, light yellow; the anterior portion of the thorax, in certain light, shows a whitish sheen; a pair of bristles on the ante-alar and post-alar callosities, and four on the scutellum. Abdomen black, shining; the posterior edge of the second and third segments narrowly margined with yellow; a small yellow spot bearing a tuft of black bristles on the sides of the first segment, the remaining segments with more or less prominent hairs and bristles, especially along the sides of the posterior margins; genital portions dark yellow; halteres yellow, the knobs narrowly margined with brown above. Legs light yellow. Wings hyaline, with a very slight brownish tinge. Length, 6 mm.

Two specimens, Richmond Hill, Long Island, N. Y., July 2, 1901.

This species is dedicated to my friend Mr. Erich Daecke. The genus was recorded (but the species not described) by Mr. Coquillett in Mrs. Slosson's "Additional List of Insects Taken in Alpine Regions of Mt. Washington" (Entom. News, Nov., 1897, p. 239). The specimen was submitted to Mr. Coquillett who pronounced it a different species, and also stated that he had another specimen collected by Mrs. Slosson at Franconia, N. H., which is identical. It differs from the European *N. flavicornis* Zett. in having the aristæ entirely black, and only the second and third segments of the abdomen banded with yellow; from *N. scutellatus* Macq. in having the third joint of the antennæ large and bright yellow, not small and brown, while the latter has five of its abdominal segments banded with yellow.

* * *

How Shall We Arrange Our Collections?

By H. T. Fernald, Amherst, Mass.

This question has always been one which has caused much trouble. Before the work of Darwin made itself felt, it was, perhaps, of less importance, but with the development of the idea of descent as applied to all animal life, the problem of such an arrangement as should represent the varous stages of evolution of the insects has become prominent. Formerly every one expected to find the first tray of a collection devoted to Apoid

Hymenoptera, followed by the other members of that group; but what order would next appear as the trays were pulled out was largely a matter of chance and the influence which various manuals of entomology had upon the owner.

The influence of evolution upon science has perhaps nowhere been more marked than in entomology, as may be seen by comparing an early edition of Packard's "Guide" with Comstock's "Manual." And in the presentation of the subject to students it is now practically universal to pass from the simple to the complex—from the generalized to the more highly specialized groups.

The result of this influence has also been felt in the arrangement of collections of insects where the first boxes or trays now almost always contain the *Apterygota*, followed by such groups as the *Ephemerida*, etc., while we turn to the last of the series to find the Hymenoptera.

When we examine the arrangement of insects within the different groups, however, we find that the change is but superficial, for in nine collections out of every ten the Lepidoptera begin with the butterflies instead of the Micropterygoidea (Jugatæ) or lower Frenatæ, and the series of Hymenoptera is introduced by the bees instead of being closed by them.

The cause for this is not far to seek. Evolution has reached the orders, but has not as yet led the makers of the check-lists to revise their sequence of names, and as we all use check-lists by which to arrange insects, the result is merely confusion confounded.

That this will remain the case till check-list makers gather courage sufficient to begin their lists with the most generalized (primitive) insects of a group and work towards the most specialized forms is evident, but that such arrangements are still permitted by custom to override our knowledge of the develpment of insect life is much to be regretted.

It must be recognized, of course, that evolution has not been linear but divergent, and that the limitations of any printed check-list render it difficult to indicate divergent lines, but this may be overcome by following the method stated by Comstock in his paper "Evolution and Taxonomy" thus: "It seems to me that the most practicable way of meeting this difficulty is to begin with the description of the most generalized form known, and to follow this with descriptions of forms representing a single line of development, passing successively to more and more specialized forms included in this line. When the treatment of one line of development has been completed take up another line beginning with the most generalized member of that line and clearly indicating in the text that a new start has been made."

It is almost needless to remark, that probably in no order of insects are we prepared to establish a check-list along such lines, which would every where express the true phyletic relationships. Nevertheless, an attempt to arrange such a list, beginning with the most generalized, and passing toward the more specialized forms would be of vast assistance in attracting attention to the problem of relative degrees of specialization and evolution, and lead to more and better work along this line.

As the matter stands to-day, a purely working collection is rarely arranged in a systematic way at all. One intended for use with classes or for exhibition purposes, will probably show the modern ideas of insect evolution so far as the orders go, but within the limits of an order it must either fail to express any such plan, or indicate only the individual opinion of its arranger in the orders to which he has given most study, while the others show an entire lack of any phylogenetic system. How shall we arrange our collections on anything like the systematic plan followed elsewhere in Zoology, if the check-list makers, whom we perforce must follow at least for the orders less familiar to us, persist in what amounts to a practical rejection of the idea of progressive evolution in the preparation of their lists?

A HESPERID NEW TO OUR FAUNA.—I recently determined for the U. S. National Museum males and females of *Nisoniades brunnea* Herr.-Schaef. They were taken on Sugar Loaf Key, Florida, by Mr. C. L. Pollard, of the National Museum. The sexes are quite dissimilar. The species was originally described from Cuba.—HENRY SKINNER.

The Moths (Heterocera) of Eastern Pennsylvania.

BY PHILIP LAURENT.

(Continued from page 72.)

Pyrrhia umbra *Hbn.*, common.
" " var. angulata *Grt.*, ?
Orthosia ferruginoides *Gn.*, rare.
" helva *Grt.*, rare.
" lutosa *Andr.*, rare.
Glæa inulta *Grt.*, rare.
Xanthia flavago *Fab.*, rare.
Cirrœdia pampina, *Gn.*, rare.
Scoliopteryx libatrix *Linn.*, rare.
Xylina disposita *Morr.*, rare.
" petulca *Grt.*, rare.
" bethunei *G. & R.*, rare.
" fagina *Morr.*, rare.
" laticinerea *Grt.*, rare.
" unimoda *Lint.*, rare.
" pexata *Grt.*, rare.
Morrisonia evicta var. vomerina *Grt.*, rare.
Calocampa nupera *Lint.*, rare.
" cineritia *Grt.*, rare.
" curvimacula *Morr.*, rare.
Cucullia convexipennis *Grt.*, rare.
" asteroides *Gn.*, rare.
" florea *Gn.*, rare.
" intermedia *Speyer*, rare.
Marasmalus ventilator *Grt.*, rare.
" histrio *Grt.*, rare.
Ingura oculatrix *Gn.*, rare.
Aletia argillacea *Hbn.*, common.
Ogdoconta cinereola *Gn*, common.
Abrostola ovalis *Gn.*, rare.
" urentis *Gn.*, rare.
Plusia ærea *Hbn.*, common.
" balluca *Geyer*, rare.
" putnami *Grt.*, rare.
" precationis *Gn.*, common.
" brassicæ *Riley*, common.
" simplex *Gn.*, common.
Calpe canadensis *Beth.*, rare.
Plusiodonta compressipalpis *Gn.*, rare.
Hypsoropha hormos *Hbn.*, rare.
Cirrhophanus triangulifer *Grt.*, rare
Plagiomimicus pitychromus *Grt.*, rare.
Holiothis rhexia *S. & A.*, rare.
" armiger *Hbn.*, common.
Alaria florida *Gn.*, rare.
Schinia nundina *Dru*, rare.
" lynx *Gn.*, rare.
" tertia *Grt.*, rare.
" arcifera *Gn.*, common.
" thoreaui *G. & R*, rare.
" rivulosa *Gn*, rare.
Axenus arvalis *Grt*, rare.
Heliaca diminutiva *Grt.*, rare.
Acontia aprica *Hbn*, rare.
" erastrioides *Gn.*, common
" candefacta *Hbn.*, common
Chamyris cerintha *Tr.*, common.
Xanthoptera nigrofimbria *Gn.*, rare
Spragueia leo *Gn.*, rare.
Prothymia rosalba *Grt.*, rare.
Metathorasa monetifera *Gn.*, rare.
Euherrichia mollissima *Gn.*, rare.
Lithacodia bellicula *Hbn.*, rare.
Erastria concinnimacula *Gn*, rare.
" synochitis *G. & R.*, rare.
" musta *G. & R.*, rare.
" muscosula *Gn.*, rare.
" apicosa *Harv.*, common.
" carneola *Gn.*, common.
Galgula hepara *Grt.*, rare.
" subpartita *Gn.*, rare.
Metoponia obtusa *H.-S.*, rare.
Drasteria erechtea *Cram.*, common
" var. agricola *G. & R.*, common.
" erichto *Gn.*, common.
Litosea convalescens *Gn.*, rare.
Euclidia cuspidea *Hbn.*, rare.
Syneda graphica *Hbn.*, rare.
Melipotis jucunda *Hbn.*, rare.

Catocala nubilis *Hbn.*, common.
" elonympha *Hbn.*, common.
" amica *Hbn.*, common.
" " var. lineella *Grt*, rare.
" gracilis *Edw.*, common.
" " var. sordida *Grt.*, rare.
" minuta *Edw.*, rare.
" grynea *Cram.*, common.
" præclara *G. & R.*, rare.
" micronympha *Gn.*, rare.
" similis *Edw.*, rare.
" amasia *S. & A.*, rare.
" cratægi *Saund.*, rare.
" nuptialis *Walk*, rare.
" cerogama *Gn.*, rare.
" ultronia *Hbn.*, common.
" coccinata *Grt.*, rare.
" ilia *Cram.*, common.
" " var. uxor *Gn.*, common.
" marmorata *Edw.*, rare.
" parta *Gn.*, rare.
" unijuga *Walk.*, rare.
" concumbens *Walk.*, rare.
" cara *Gn.*, common.
" " var. carissima *Hulst.*, rare.
" amatrix *Hbn.*, common.
" relicta *Walk.*, rare.
" tristis *Edw.*, rare.
" epione *Dru.*, rare.
" antinympha *Hbn.*, common.
" serena *Edw.*, rare.
" habilis *Grt.*, common.
" innubens *Gn.*, common.
" " var. hinda *French*, common.
" " var. scintillans *G. & R.*, common.
" paleogama *Gn.*, common.
" paleogama, var. phalanga *Grt.*, rare.
Catocala neogama *S. & A.*, common.
" subnata *Grt.*, rare.
" piatrix *Grt.*, common.
" nebulosa *Edw.*, rare.
" judith *Strk.*, rare.
" robinsonii *Grt.*, common.
" retecta *Grt*, rare.
" " var. flebilis *Grt.*, rare.
" vidua *S. & A.*, rare.
" mæstosa *Hulst.*, rare.
" lacrymosa *Gn.*, rare.
" insolabalis *Gn.*, rare.
" angusi *Grt.*, rare.
" obscura *Strk.*, rare.
" " var. residua *Grt.*, common.
Strenoloma lunilinea *Grt.*, rare.
Phoberia atomaris *Hbn.*, rare.
Celiptera frustulum *Gn.*, common.
Phurys vinculum *Gn.*, rare.
Parallelia bistriaris *Hbn.*, common.
Panapoda rufimargo *Hbn*, common.
Panapoda rufimargo var. carneicosta *Gn.*, rare.
Remigia latipes *Gn.*, rare.
" hexastylus *Harv.*, rare.
Poaphila quadrifilaris *Hbn.*, rare.
" herbarum *Gn.*, rare.
Entoreuma tenuis *Grt.*, rare.
Anticarsia gemmatilis *Hbn.*, rare.
Erebus odora *Linn.*, rare.
Thysania zenobia *Cram.*, rare.
Zale horrida *Hbn.*, rare.
Pheocyma lunifera *Hbn.*, common.
Homoptera edusa *Dru*, common.
" " var. lunata *Dru.*, common.
Homoptera edusa var. saundersii *Beth.*, common.
Homoptera nigricans *Beth.*, rare.
" calycanthata *S & A*, rare.
Homoptera unilineata *Grt.*, rare.

Ypsia undularis *Dru.*, rare.
Homopyralis discalis *Grt.*, rare.
" tactus *Grt.*, rare.
Spargaloma sexpunctata *Grt.*, rare.
" umbrifascia *Grt.*, rare.
Pangrapta decoralis *Hbn.*, rare.
Phalænostola larentioides *Grt.*, rare.
Pseudaglossa lubricalis *Geyer*, common.
Pseudaglossa denticulalis *Harv.*, rare.
Epizeuxis æmula *Hbn*, rare.
" americalis *Gn.*, common.
Litognatha nubilifascia *Grt.*, rare.
" lithophora *Grt.*, rare.
Herminia morbidalis *Gn.*, common
Pityolita pedipalalis *Gn*, rare.
Zanclognatha lævigata *Grt.*, rare.
" ochreipennis *Grt.*, rare.
Zanclognatha cruralis *Gn.*, rare.
Zanclognatha marcidilinea *Grt.*, rare.
Philometra longilabris *Grt.*, rare.
" eumelusalis *Walk.*, rare
Rivula propinqualis *Gn.*, rare.
Palthis angularis *Hbn.*, rare.
" asopialis *Gn.*, rare.
Heterogramma rurigena *Grt*, rare.
Capis curvata *Grt.*, rare
Renia discoloralis *Gn.*, rare.
" brevirostralis *Grt.*, common.
" larvalis *Grt.*, rare.
" flavipunctalis *Geyer*, rare.
" plenilinealis *Grt.*, rare.
Bleptina caradrinalis *Gn.*, common.
Bomolocha baltimoralis *Gn.*, common.
Bomolocha manalis *Walk.*, common
" madefactalis *Gn.*, rare.
Hypena humuli *Harr.*, common.
" scabra *Fabr.*, common.
Tortricodes bifidalis *Grt*, rare.

(To be continued.)

Notes on Cicindela Hentzii.

By L. E. Hood.

The first specimens of this Cicindelid were discovered in the town of Milton, Mass., situated south of Boston but a few miles, by Dr. T. W. Harris, and were described by Prof. Hentz under the name of *Cicindela hemorrhoidalis* in the Trans. Amer. Phil. Soc., vol. iii, New Series, p. 254.

Specimens were sent abroad to the Count De Jean, who changed the name to *C. hentzii* in honor of its first describer.

I understand that specimens of this species were at this time very rare, and Dr. Gould states in his article read before the Boston Soc. Nat. His. in 1834, that "Dr. Harris has never found it except between the 1st and 20th of August, though he has often sought it at other seasons."

The habitat of this insect is extremely local, but undergoing interesting changes year by year, slowly spreading, not only into towns adjacent to Milton, but is also found in several localities northeast of Boston—points some twelve or fifteen miles apart—but always inhabiting the same kind of moss-covered rocks and ledges.

It will be seen by this that the City of Boston separates.the habitat of this species into two groups of localities; the first, or parent locality, being the town of Milton, from which the species has gradually spread until now it is found in Brookline, West Roxbury and Dorchester (these towns forming part of the City of Boston), and even to Gloucester on the south, and the second locality to the north, where they were first found in the hills near Malden and from which point they have penetrated in to the towns of Melrose and Wyoming in one direction, and in Medford in another.

I found my first specimens of *Cicindela hentzii* in Malden, July 5, 1883. They were very scarce that year, and it was not until some time after this that they began to be found in other nearby districts.

Perhaps the work on the great Metropolitan Park system has had something to do with this, as many roadways have been built, and much blasting, filling in and other work done in order to bring this land into suitable condition.

While the habitat of this species has undergone many changes, so also has there been changes in the time of its apearance, specimens being found often in June. I have found them as early as June 17th one year when the season was very early and the weather very warm. They are found in numbers in July and August and often up to the middle of September, though some years quite rare after about August 20th.

At one time I thought there were two broods of *C. hentzii*, some seasons they become quite numerous in July, but after a few days they suddenly disappear to return in August. I now think this is due to some climatic or other natural cause, as this occurence has not been observed for several years.

It is difficult at best to secure *Cicindela* larvæ and with the *hentzii* this difficulty becomes almost an impossibility owing to the nature of the material they burrow in.

I failed repeatedly in my endeavors to secure larvæ in the usual way, the burrows examined were either situated in large crevices on the face of the ledges, or on the ground between spurs of the rocks, the former being filled mostly with sand, loose stones, and an accumulation of dirt and dead leaves, the latter often filled with large stones that prevented success in the search quite effectually.

I would find the burrows of the larvæ, but could not get a straw into the hole more than a few inches, and never secured a single specimen until I discovered that the larvæ only bore from three to four inches and then dig the balance of the hole at right angles; sometimes this angle extends under a flat stone.

It is very hard to trace the holes after you once break the ground, as they are soon filled up by the debris.

I have only secured one perfect and one badly damaged larva as the result of many years search, not a very good showing, I confess, but at the same time I have had the enjoyment of the quest.

The perfect specimen was secured under a small flat rock beneath which the tunnel had ended, the entire burrow not being over eight inches long. There is no doubt that the larva is a *hentzii*, as it is rare to find other species with them. The specimen is about the same as a larva of *C. 6-guttata*, rather small and darker than the average examples of *Cicindela*.

While *C. hentzii* is not a rare species, it is by no means a common one and is extra local, specimens have been very scarce the past season.

In the extreme eastern part of Massachusetts a table of the comparative occurence of the species of *Cicindela* would be about as follows—10 representing the most common.

C. purpurea 10, *C. 6-guttata* 10, *C. vulgaris* 8, *C. punctulata* 8, *C. hentzii* 3, *C. repanda* 2, *C. marginata* 1, *C. patruela* 1, *C. dorsalis ?*

The first three are found everywhere, the fourth is common in autumn, being often observed on certain streets within the limits of Boston. *C. hentzii* is, as mentioned above, local and never found except in well defined situations. *C. repanda* is rather scarce though abundant in sandy fields a few miles inland. *C. marginata* is very rare.

C. patruela, once very common in a sandy field about one mile south of the Newtonville depot, a town a few miles west of Boston, is now extremely rare, if not extinct. I have found no specimens during the past ten years. I have seen specimens of *C. generosa* that were found on the seashore to the south of Boston, but have never found any though often searched for. I class it as a questionable inhabitant of our locality.

A Collecting Trip South.

By J. H. Reading, Chicago, Ill.

We, that is my wife and I, started for Jackson, Miss., Sunday, September, 7, 1902, at 6.20, over the Illinois Central and landed in Memphis, Tenn., about 8 A M., Monday. We were fortunate in accidentally going to what I afterward found to be the best hotel in the South, as far as my experience went, the Arlington on the corner of Adams and Main Streets. We had decided to lay over a day in Memphis and look around. Here is where I found I had made my first mistake. I packed my net in one of our telescopes and had it checked to Jackson, so I had nothing but my cyanide bottle to help me when we got among the game. After breakfast I inquired if there were any parks around the city, and was told by the hotel clerk I had better see their new cemetery "Greenwood," so out to Greenwood we went. It is a fine park-like place, well kept, and has many fine trees, among which I searched diligently and was rewarded by the capture of two *Catocala* moths, one *relicta* and one *piatrix*. There were quite a number of butterflies flying about, mostly *Euptoieta claudia*, but I could not catch any of them. I caught some specimens of *Lycaena*, but do not know just what variety they are. After dinner we took another trip on the trolley cars to East End Park, and it was at this place I missed my net more than ever. This park is a natural woods used as a pic-nic grounds in the summer time, and it seemed to be alive with a dozen or more different varieties of butterflies. There seemed to me to be about 7,000,000 of them in that park, and by being foxy I succeded in catching three or four specimens of *turnus* and *troilus* with my fingers as they were feeding on some tall flowering weeds that were new to me and which grew as high as my head. I could not find a *Catocala* in this park, and I soon got disgusted and left for the hotel. I have found it to be a fact, when in former years around Chicago I would go out in the woods without my gun that I would see all kinds of game, and I guess it holds good on the butterfly question. The next morning we were off for Jackson, where I looked forward to better luck. We arrived safely at 2.30 P. M. and went to the only hotel in that city. After getting our baggage over from the depot and getting my net, we went on the one and only street car to some nameless park at the terminus of the line, and I was soon busy looking for game, but without much luck, as my wife was afraid to be left alone in this lonesome place, so we decided to go back to the hotel, the calulation was that I would come out alone in the morning and see what I could capture. We got back in time for supper, and such a supper, it nearly poisoned both of us! I thought I could go almost anything anybody else could, but this game was too fierce for me, while my wife was rendered quite sick. The stuff was not cooked and the coffee and tea served were a delusion and a snare.

I found a train left for Birmingham, Ala., at 7.20 P. M., and we decided to go there at once, so did not have a chance to see any more of Jackson or its surroundings, and if the Lord will forgive me for ever going there this time I will promise never to offend in a like manner again. To make matters worse, the weather turned cold, and a raw chilly wind came up that chilled one through and through. It reminded me of one of our lake breezes in November at Chicago. So if this is the sunny South, thought I, please give me no more of it. After a long night ride over the Queen and Crescent Railroad by way of Meriden, where we had to change cars, we arrived in Birmingham, Ala., about 7.30 A. M.

I had noticed a suburb of the city, as we came through on the cars, called Powderly after my friend Terry the old K. of L. chief, and jumping on a trolley car, labeled Powderly, I was soon leaving the city behind me and getting out into the fields and woods of the country. I left the car at what I thought a likely looking place and struck out over a field yellow with field daisies, as they called them down there. The dew was heavy on every bush and blade of grass, and in five minutes my feet were as wet as if I had jumped into a creek, but I was among the butterflies at last, and all discomforts and disappointments were for a time forgotten. They were *Terias nicippe* mostly, but there were thousands of them. I found a field where something had been planted some time, but it seemed to me to have nothing growing there but wild morning-glories, and they were alive with *Catopsilia eubule*, *Terias nicippe*, and here and there an *Agraulis vanillæ* and *Eu. claudia*, *Pyrgus tessellata* and *J. cænia*, could be seen, and some small yellow flies about three-quarters of an inch wide. I had a good two hours' fun among them all and captured about 200 specimens in that time and then went back to the hotel for dinner.

I spent more or less of every day out at my morning-glory patch, and found that after 10 A. M. the butterflies generally deserted the morning-glories, but where they went to I could not discover. I took many long walks through the woods around Birmingham, but with the exception of a little gray and brown moth of which I caught six or seven among the weeds, I saw nothing alive but a small tree lizard which was too quick for me to catch. I found one old battered specimen of a *Catocala*; it was so rubbed and battered that I could not tell whether it was *obscura* or *insolabilis*, but whatever it was I left it alone in its glory and isolation. I got a little nigger (as they are called down there) to accompany me through the woods and I could not make him believe anything else but that I used the butterflies to make medicine. There are no collectors down there and it was a common salutation, "Say, Mista, wat yo catch dem grasshoppers fo!"

I found the weather in the South during September to be colder and more disagreeable than in Chicago.

They tell me June is the best month to visit that section, and if I ever go again it will be in the early Summer.

◆

THE FOLLOWING was told to me by my "better half" (?)

Tramp: Give me a cent's worth of bug powder.

Druggist: Don't sell a cent's worth, that wouldn't pay for the paper.

Tramp: Don't want any paper, just put it down my back.—P. L.

Maryland Hymenoptera (Aculeata).

BY H. L. VIERECK.

This list is based on a collection made by Mr. E. G. Vanatta, of the Academy of Natural Sciences of Philadelphia, and specimens sent for identification by Professor A. L. Quaintance. Those from Chestertown and Pomona were collected by Mr. Vanatta. The rest are from the collection of the Maryland Agricultural College.

There is no list of Maryland Hymenoptera in our literature, but this is true of most States, and there is a vast field for useful, interesting work of this kind. It would be an incentive to work if we had the species in each State listed. Again, accurate records are needed; too much stress cannot be laid on the fact that an insect should be perfect, and accompanied by locality, date and such notes as can be gathered about its habits. In Hymenoptera a large number of the species are only known vaguely to come from a State. We need more records as it is only by their accumulation that the mist that enshrouds so many facts will be dispelled, and there should be no hesitancy in making known accurate notes.

Bombus virginicus Oliv. ♀ and ☿ ☿, College Park, Oct., Sept, 1893. ☿ ☿, Chestertown, August 17, 1899.

Bombus americanorum Fabr. ☿ ☿ and ♂, Chestertown, Aug. 26, 1899, some of these ☿ ☿ have the band of pubescence on anterior part of thorax white. I have never noticed this on specimens from other localities. College Park, ♀ ♀, ☿ ☿, ♂ ♂. June 29, 1898, July 14, 1897, Oct., 1893.

Bombus separatus Cress. ♂ ♂, Chestertown, Aug. 6, 1901, Aug. 13-17, 1899 Boonsboro, Aug. 5, 1898, ☿ ☿.

Psithyrus laboriosus Fabr. ♀ ♀ and ♂ ♂, College Park, Oct., 1893.

Xenoglossa pruinosa Say. ♂ ♂, College Park, July 14, 1898.

Emphor bombiformis Cress. ♀ and ♂, Chestertown, Aug. 12, 1901. Co-types are from Kansas (Snow), Georgia and Virginia. Gloucester Co., N. J., Aug. 6 (Fox).

Melissodes perplexa Cress. ♀, College Park, Sept., 1893.

Melissodes rustica Say. ♀, College Park, Sept., 1893.

Epeolus mercatus Fabr. ♂ ♂, College Park, Sept., 1893.

Epeolus remigatus Fabr. ♀ ♂, College Park, Sept., 1893, July 7, 1898.

Xylocopa virginica Dru. ♀, Chestertown, Aug. 12, 1901.

Megachile mendica Cress. ♀, College Park, Sept., 1893.

Anthidium notatum Latr. ♀, Chestertown, Aug. 12, 1901.

Panurginus compositarum Rob. ♀ ♀, College Park, Aug , 1893.
Andrena bipunctata Cress. ♄, College Park, Sept., 1893.
Andrena vicina Sm. ♄, College Park, April 10, 1898.
Andrena americana D. T. ♀ ♀, ♂, College Park, Sept., 1893.
Augochlora pura Say. ♂ ♂, College Park, June 23, 1898.
Agapostemon radiatus Say. ♀, College Park, Sept., 1893.
Halictus flavipes Fabr. ♀ ♀, College Park, May 20, 1898. Hagerstown, July 25, 1898. Chestertown.
Halictus pilosus Sm. ♀, College Park, July 21, 1898.
Halictus zephyrus Sm. ♂, College Park, Sept., 1893.
Halictus inconspicuus Sm. ♀ ♀, ♂ ♂, College Park, June 23, 1898.
Halictus fuscipennis Sm. ♂, College Park, Sept , 1893.
Halictus pectoralis Sm. ♂, College Park, June 23, 1898.
Halictus similis Sm. ♀, College Park, Oct.
Halictus ligatus Say. ♀ ♀, College Park, July 8, 1898, July 14, 1897. Hagerstown, July 25, 1898.
Colletes compactus Cress. ♀ ♀, College Park, Sept., 1893.
Colletes mandibularis Sm. ♀, College Park, Sept., 1893.
Colletes nitidus Sm. ♂, College Park, Sept., 1893.
Prosopis affinis Sm. ♀, College Park, June 29, 1898.
Notoglossa emarginata Say. ♄, Chestertown, Aug. 17, 1901.
Anacrabro ocellatus Pack. ♀, Chestertown, Aug. 17, 1901.
Psen tibialis Cress. ♂, College Park, June 23, 1898.
Notogonia argentata Beauv. ♀, College Park, May 21, 1898, Sept. 1893.
Ancistromma distincta Sm. ♀, College Park, Sept., 1893.
Larra analis Fab. ♀ and *cressonii* Fox = ♄ *analis* Fabr. College Park, Oct., Sept , 1893.
Tachytes aurulentus Fabr. ♀, College Park, Sept., 1893. ♂ Chestertown, Aug 17, 1901.
Tachytes obscurus Cress. ♀ ♀, College Park, Sept , 1893.
Cerceris bicornuta Guer. ♀ ♀, Chestertown, Aug. 3, 1901.
Cerceris fumipennis Say. ♂ ♂ var. with light wings. College Park, July 9, 1898, Oct. 19, 1898.
Pseudanthophilus ventilabris Cress. ♀ ♀ and ♂ ♂, Chestertown, Aug. 10-17, 1901.
Anthophilus punctatus Say. ♂, College Park, Sept. 3, 1897.
Anthophilus bilunatus Cress. ♀, College Park, Sept., 1893.
Trypoxylon tridentatum Pack. ♂ ♂, College Park, July 1-31, 1897.
Astata unicolor Say. ♀ ♀, ♂ ♂, College Park, Sept., 1893, July 31, 1897.
Sphecius speciosus Dru. ♀, ♂ ♂, the latter sex Chestertown. Aug. 3, 1901.
Megastizus brevipennis Walsh. ♀, College Park, July 21, 1897, previously known only from Illinois, Kansas and Texas.
Sphex ichneumoneus Linn. ♀ ♀, ♂, Chestertown, Aug. 2, 10, 1901.
Sphex pennsylvanicus L. ♀ ♀ and ♂ ♂, Chestertown, Aug. 2-17, 1901.
Isodontia tibialis St. Farg. ♀ ♀ and ♂ ♂, Chestertown, Aug. 23, 1899, Aug. 17, 1901.

Ammophila urnaria Klug. Chestertown, Aug. 8, 17, 1901.

Ammophila extremitata Cress. var. *pictipennis* Walsh. ♀ ♀ and ♂ ♂, Aug. 16, 1899. Aug. 10, 12, 17, 1901.

Ammophila violaceipennis St. Farg. ♀ ♀, ♂ ♂, College Park, Oct. 20, 1900. Chestertown, Aug. 13, 23, 1899.

Ammophila procera Dahlb. ♀, ♂, Chestertown, Aug. 17, 1899, Aug. 3. 1901.

Ammophila gracilis St. Farg. ♀, Chestertown, Aug. 17, 1901.

Sceliphron cementarius Dru. ♀ ♀ and ♂ ♂, College Park, Sept. 1893, July 17, 1897. Chestertown, Aug. 8-28, 1901.

Chalybion caeruleum L. ♀ ♀, ♂ ♂, College Park, Aug. 26, 1897, Sept., 1893, May 27, 1898. Chestertown, Aug. 1, 1901.

Cryptocheilus fulvicornis Cress. ♀, Chestertown, Aug. 16, 1901.

" *unifasciatus* Say. ♂, Chestertown, Aug. 3, 1901.

Anoplius atrox Dahlb. ♀ ♀, ♂ ♂, College Park, Sept., 1893.

" *americanus* Bv. ♀ ♀, College Park, Sept., 1893.

" *tenebrosus* Cress. ♀, College Park, Sept., 1893.

Agenia bombycina Cress. ♀ ♀, Aug., 1895.

Vespa maculata L. ♀ ♀, ♂, College Park, Feb. 13, May 6, 1898, Sept, 1893.

Vespa carolina Dru. ♀, College Park, May 25, 1898.

" *vidua* Sauss. ♀, College Park, Sept., 1893.

" *germanica* Fabr. ♀, ☿ ☿, College Park, Sept., 1893, May 12, 1898, Aug. 4, 1897. Chestertown, Nov., 1898 (Mary. Agric. Coll.), Aug. 14, 1901 (E. G. Vanatta).

Vespa cuneata Fabr. ♀ ♀, College Park, Sept., 1893, Aug. 4, 1897.

Polistes rubiginosus Lep. ♀ ♀, College Park, Sept., 1893, May 9, 1898.

Polistes variatus Cress. ♀ ♀, ♂ ♂, College Park, Sept., 1893, July 17, 1897, Jan. 26, May 11, Oct. 20, Nov. 18, 1898 Chestertown, July 29,-Aug. 3, 1901.

Polistes metricus Say. ♀ ♀, ♂, College Park, Sept., 1893, Jan. 19, 1897, Jan. 21, March 12, 24, May 2, 1898, Oct. 10, 1900. Chestertown, Aug. 1, 1901.

Polistes annularis L. ♀ ♀, Chestertown, Nov., 1898 (Coll.), Aug. 12, 1901.

Leionotus conformis Sauss. ♀, College Park, Sept., 1893.

Ancistrocerus capra Sauss. ♀ ♀, College Park, Sept., 1893.

Monobia quadridens L. ♀ ♀, ♂, College Park, Sept., 1893, July 4, 1897, July 2, 1898. Chestertown, Aug. 10, 1901.

Holepyga ventralis Say. College Park, Sept., 1893. A remarkable freak, it has the 2nd abd. seg. separated into 2 parts by the union of the first and third across the mid.

Olochrysis perpulchra Cress. Chestertown, Aug. 2, 1901, previously known from Canada, Delaware, Camden Co., N. J, July 12 (Fox), N. C., Geo., Colo., Utah, Nev., Calif., N. M., Mont., Wash. and Vancouver's Island.

Trichrysis tridens Lep. Chestertown, Aug. 8. 1901.

Tetrachrysis cærulans Fabr. College Park, Oct., 1893, July 9, 1898.

Myzine sexcincta Fabr. ♀ ♀, ♂ ♂, College Park, Sept., 1893. Chestertown, Aug. 2-12, 1901.

Myzine hamata Say. ♂ ♂, Mulliken, Aug. 5, 1897. Boonsboro, Aug. 5, 1898.

Scolia bicincta Fabr. ♀ ♀, ♂, Boonsboro, Aug. 5, 1898. College Park, Sept. 2, 1897. Chestertown, Aug. 16, 1901.

Scolia dubia Say. ♂ ♂, ♀, College Park, Aug. 12, 1897. Chestertown, Aug. 10-17, 1901.

Elis quadrinotata Fabr. ♂.

Timulla hexagona Say. ♂ ♂, Chestertown, Aug. 12, 1901, ♀ ♀ = *dubitata* Sm., Chestertown, Aug. 2, 1901. College Park, Oct., 1898.

Ephuta scrupea Say. ♂, Chestertown, Aug. 1, 1901.

Pseudomethoca canadensis Blake. ♂, Sept. 16, 1897.

Dasymutilla occidentalis L. ♀, Chestertown, July 31, 1901.

Sphærophthalma cypris Blake. ♀ ♂, College Park, Aug. 26, 1897. Chestertown, Aug. 30, 1901.

Sphærophthalma vesta Cress. ♀ ♀, Mulliken, May 5, 1898. Chestertown, July 30, 1901.

Sphærophthalma castor Blake. ♂ ♂, Chestertown, Aug. 12-16, 1901.

Identifications of the ants below have been furnished by Professor W. M. Wheeler.

Cremastogaster lineolata Say. ♂ ♂, ♀ ♀, ☿ ☿, Chestertown, Aug. 4-10, 1901. ☿ ☿, ♀ ♀, College Park, Sept. 3, 1897.

Tetramorium cæspitum L. ☿ ☿, Chestertown, Aug. 2, 1901.

Monomorium minutum Mayr. var. *minimum* Buckley. ☿ ☿, Chestertown, Aug. 13, 1901.

Pheidole vinelandica Forel. 44 ☿ ☿, Chestertown, July 30, 1901.

Stenamma (*Aphænogaster*) *tennesseense* Mayr. ♀ ♀, ♂ ♂, Chestertown, Aug. 2-8, 1901. Pomona, Aug 8, 1901.

Stenamma (*Aphænogaster*) *fulvum* Roger. Typical ☿ ☿, ♀ ♂, Chestertown, Aug. 2-8, 1901.

Dolichoderus mariæ Forel. ♂ (probably), College Park, June 23, 1898.

Tapinoma sessile Say. ☿ ☿, Chestertown, Aug. 7, 1901.

Camponotus castaneus Latr. ☿ ☿, Chestertown, Aug. 10, 1901.

Camponotus herculeanus L. subsp *pennsylvanicus* DeGeer var. *ferrugineus* Fabr. ☿ ☿, Pomona, Aug. 8, 1901.

Camponotus herculeanus L. subsp. *pennsylvanicus* DeG. ☿ ☿, July 28, 1901. Chestertown, ♀ ♀, 44, Aug. 8, 1901, Pomona.

Prenolepis imparis Say. ☿ ☿ ? College Park, Sept., 1893.

Prenolepis imparis Say. var. *minuta* Em. ☿ ☿, July 30, 1901.

tus Nyl. subsp. *mixtus* Nyl. var. *minutus* Em. ♀, ☿ ☿, Chestertown.

Lasius niger L. var. *americanus* Em. ☿ ☿, July 30-Aug. 3, 1901.
Lasius claviger Roger. Four ♀.
Formica pallidi-fulva Latr. subsp. *schaufussi* Mayr. var. *incerta* Em. ☿ ☿, June 29-Aug. 10, 1901, Chestertown.
Formica fusca L. var. *subsericea* Say. ☿ ☿, June 28-Aug. 8, 1901, Chestertown.

San Francisco; a Reminiscence.

By H. F. Wickham, Iowa City, Iowa.

Through lonely days under the glaring sun of the great southwestern deserts, comes now and again the remembrance of pleasant hours spent in the company of kind friends in the metropolis of the Pacific Coast; strong is the temptation to leave the alkali water, the burning, deserted sand-flats and the barren hills for the comfort of the pleasant homes where cordial welcome and entertaining discourse await the wandering insect hunter. In this far Western city, there has been of late years a great awakening of interest in our study, and the labors of the pioneer, Chas. Fuchs, are now supplemented by those of many another who finds a great part of his inspiration in the unflagging zeal and cheerfully given assistance of our friend. His home is truly "entomological headquarters" for the elect of San Francisco, and fortunate is the man who finds himself there, when, towards the end of the afternoon, the fraternity begins to assemble for one of those informal, unannounced, spontaneous social sessions, the outcome of a general desire to show and discuss treasures, to exchange opinions and views, and to enjoy the genial society of the host and his wife. The fine reference collection of Mr. Fuchs is in constant demand to illustrate one point or another, and many is the rarity that the visitor sees here for the first time in his life. Here he meets not only the resident students of our science, but those as well who are passing through the city, en route for other points, since no one who cares for beetles neglects to present himself at the first opportunity.

Mr. Fuchs' collection of Coleoptera is not only of great extent, but is beautifully mounted, and the matter of labelling has received careful attention, so that one finds more than a State record when he examines the material. A particularly interesting feature is the series of specimens representing the genera of North American beetles, this being the line along which the owner has put his best endeavors. It is doubtful if so complete a lot can be shown in any other cabinet, public or private, in the country. A few squares away, may be seen the collections of Dr. Blaisdell, extremely rich in Californian species, the interest just now centering in the Tenebrionidæ, especially *Eleodes*, upon which group the Doctor is now at work. Mr. Letcher is supplementing a large collection of Pacific Coast Lepidoptera by one of beetles, and is a most welcome addition to the ranks of students of the order. Across the bay, at Oakland, Dr. Van Dyke has one of the finest collections of Coleoptera on the Coast, the result largely of his own travels about the State, while certain genera which engross his attention at present have been nearly completed.

The California Academy of Sciences has in its museum a considerable collection of insects. This is under the charge of Mr. Fuchs, excepting the Lepidoptera, which are cared for by Dr. Behr. The most valuable portion is the Baja Californian series, the result of several trips to the peninsula by Dr. Eisen, Miss Brandegee, Mr. Vaslit and Mr. Haynes. These collections have been worked out by specialists, and Mr. Fuchs has adopted a system of arrangement whereby the types are kept separate from the rest, and thus rendered more readily accessible. He has in preparation a list of these types, and of others which are in the possession of entomologists on the Pacific Coast, so that when this is made public it will be an easy matter for the student to find the ones he wishes to examine.

Besides the Lower Californian material, which for the present is kept separate from the rest, the Academy has a considerable series from other sources. The collection of the late Capt. D. H. Murdoch belongs here now, and contains some very good things, but is unfortunately deficient in labelling, not even a State record appearing on most of the pins. Another collection consists of specimens from the mainland of Mexico. Smaller lots from various sources make up a fair-sized aggregate. Aside from the Coleoptera I have no knowledge of the cabinet, since I neglected to examine the collections in the other orders.

On the 15th of August, 1901, the entomologists of California organized a society under the name of "The California Entomological Club," the membership reaching about thirty. The scope and title were later widened, and now, under the caption "The Pacific Coast Entomological Society," the whole Coast, from north to south, will contribute its quota. Official meetings are held quarterly, and the results are already showing through the columns of our entomological journals, though the society maintains no collections and publishes no organ of its own.

Notes on Some Interesting Species of Forficulidae and Blattidae from the Eastern United States.

By James A. G. Rehn.

Apterygida luteipennis (Serville).

1839. *Forficula luteipennis* Serville, Orthopt., p. 46. [Brazil.]

— 1876. *Forficula aculeata* Scudder, Proc. Boston Soc. Nat. Hist., xviii, p. 262 [New York, Northern Illinois, Southern Michigan.]

One female; Pennsylvania. (A. N. S., Phila.)

This species has been previously recorded from New York, New Jersey, Illinois, Michigan, Iowa and Nebraska.

Forficula auricularia Linnæus

1758. [*Forficula*] *auricularia* Linnæus, Syst. Nat., x ed., p. 423. [Europe.]

Four males; Lafayette, Indiana. Collected by F. M. Webster, about May 15, 1889. (U. S. Nat. Mus.)

This species has previously been recorded from New York and New Jersey.

Ischnoptera nigricollis Walker.

1868 *Ischnoptera nigricollis* Walker, Catal. Blatt. Brit. Mus., p. 118. [Georgia.]

One male; Enterprise, Florida. April 20. (Collection of C. Few Seiss.)

Apparently this is the first record since the original description.

Phyllodromia cubensis (Saussure).

1862. *Bl*[*atta*] *cubensis* Saussure, Revue et Magasin de Zoologie (2), xiv, p. 165. [Cuba.]

One ♀; Miami, Florida. Collected by Philip Laurent. (Collection of C. Few Seiss.)

This species, here recorded within our national limits for the first time, was originally described from Cuba, where, according to Saussure (Mem. Hist. Nat. Mexique, iv, p. 109), it is very common.

Temnopteryx virginica Brunner.

1865. *T[emnopteryx] virginica* Brunner, Nouv. Syst. Blatt., p. 86. [Draper's Valley, Virginia.]

One ♀; St. Augustine, Florida. Collected by C. W. Johnson. (A. N. S., Phila.)

This specimen considerably extends the range of this species, which has never been recorded south of Virginia. Mr. W. S. Blatchley, in "A Nature Wooing" (p. 217), speaks indefinitely of the species as though occurring in Florida, but makes no records of captures or observations.

Temnopteryx major Saussure and Zehntner.

1893. *Temnopteryx major* Saussure and Zehntner, Biol. Cent.-Amer., Orth., i, p. 54. [Tennessee.]

Two females; Chestertown, Maryland. Collected by E. G. Vanatta, August 5, 1901. (A. N. S., Phila.)

This very striking species was described from Tennessee, and this is apparently only the second record for the species. It can readily be distinguished from *T. virginica* by its large size and the broadly rotundate tips of the the tegmina.

A New Sesiid.

BY HENRY SKINNER.

Albuna beutenmülleri n. sp.

♀. Expanse 20 mm. Antennæ, palpi, head, thorax, abdomen and legs, black. Segments of abdomen slightly differentiated by being somewhat bluish and shining. Under side of abdomen and thorax with blue-black shining metallic scales. Hind legs clothed with long black hairs. Wings bright red, edged narrowly with black. Fringes black. Fore wings with a translucent spot at outer third, divided by the red veins into four parts. There is also a similar spot at inner third in the centre of the wing, which is linear. These spots are covered with beautiful, very light greenish or bluish opalescent scales. The base of the wing is black and the black margin breaks and runs slightly into the wing from the inner margin. The hind wing has two spots of the same character—one beyond the middle resting on the costa and divided into two parts, and a larger one near the base, divided into three parts by the veins. This spot extends the width of the wing. Base of wing black.

This species somewhat resembles *Euhagena nebraskæ* Hy. Edw. but the red color is brighter and shining. *E. nebraskæ* lacks the beautiful opalescent spots. Described from one specimen taken at Stockton, Utah, May 24, 1902, by Mr. Thomas Spalding.

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and, as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form, will be given free, when they are wanted; and this should be so stated on the MS., along with the number desired. The receipt of all papers will be acknowledged.—ED.

PHILADELPHIA, PA., APRIL, 1903.

The earth is becoming smaller. We do not mean that it is shrinking, but that the facilities for getting over or around it are so great that it does not seem as big as it did in the past. It is no uncommon thing for European Entomologists to visit this country on collecting tours or for the study and inspection of our collections. American Entomologists also go abroad for similar purposes. For those who can afford it nothing is pleasanter than to go after some interesting or rare species in its native haunts. Lately we have had the pleasure of meeting two entomologists from Germany who have been collecting in this country, and one of them is now planning another vacation trip to get some of our interesting species like *Argynnis diana* and *nitocris*. The other gentleman is interested in the Coleoptera. The geographical barriers will gradually be broken, and entomologists will become more and more interested in the species of the world as time goes on. This is as it should be, and will create an interest in the genera from the standpoint of the species of the world. Genera are now described without reference to the correlation of the species, and it will be years before this part of our classification is placed on anything like a firm foundation.

Entomological Literature.

A LIST OF THE NORTH AMERICAN LEPIDOPTERA AND KEY TO THE LITERATURE OF THIS ORDER OF INSECTS. By Harrison G. Dyar, Ph. D., Custodian of Lepidoptera United States National Museum, assisted by C. H. Fernald, Ph. D., the late Rev. George D. Hulst and August Busck.

This is an exceedingly valuable work and has been most carefully compiled, and there are but few serious omissions. It will be found indispensable to workers in the order Lepidoptera. Each species is given a number and the varieties are consecutively lettered. There are 652 species of Rhopalocera listed, whereas my Synonymic Catalogue (1898) contains 645 species. Dr. Dyar used 158 genera, whereas my late catalogue contains 65. The average, therefore, in Dr. Dyar's list is about one genus to a little over four species in the butterflies. I do not censure the author of the list for having followed the literature as he found it, and sincerely congratulate him on producing a work of such excellence, but I do believe that taking the genera as a whole in the Lepidoptera, especially in the Rhopalocera, they are unphilosophical, unscientific, absurd and "densely horrible," like the boiling oil mentioned in the opera of Mikado. These remarks only apply in part to the genera themselves, but refer also to the correlation of the species under them. There are several causes for this condition of affairs, such as the *mihi* itch, want of knowledge of the significance and value or lack of value of anatomical characters; workers in various parts of the world describing genera without reference to the species of the world and ignorance of the value or lack of value in the genera as a scheme of sub classification. Why not erect a genus for each species and then drop them all and get back to the species, the unit of classification. Let us take a look into the list and see how the genera appear from a logical standpoint.

The old genus *Papilio* is divided into *Iphidicles* for *ajax* and *sinon*; *Laertias* for *philenor* and *Ithobalus* for *acauda* and *polydamas*. *Acauda* is very closely related to *philenor* and may even be only a geographical race of it, yet we find them in different genera. Now what have we left under Papilio? Why logically from the standpoint of modern genera a conglomerate. *Ajax* is probably more nearly related to many in *Papilio* than *daunus* is to *indra*. How do *cresphontinus* and *machaon* compare in view of the segregation of some of the species under the three genera other than *Papilio*?

It would take a large volume to do this subject justice, so we must not tarry too long in one place, so therefore skip *Semnoppsyche* and *Speyeria*. It may be of some interest to know that *Lemonias approximata* Strecker is a synomym of *Schœnis arachne* Edwards.

Eugonia j-album and *californica* are probably another instance of absurd correlation. Our present knowledge does not warrant the lumping of so many names under *Œneis norna* (p. 31). There can be no question about the value of dividing large aggregations of species if the basis for division amounts to anything. Our previous remarks apply to the old genus *Thecla* which is divided into 14 genera. All that is necessary is to look over the species and see the utter absurdity of the whole thing. Under *Eupsyche* are placed species that have no relationship. Poor *melinus* looks very lonely. The Hesperidæ are also in a chaotic condition. There is a character found here and there throughout the family, the costal fold. It is a male character and no one knows why it occurs in one species and not in another. Some genera are separated on its presence or absence and in other cases it is not used at all. The genus *Pholisora* is based on its presence, if I remember correctly, as is also the genus *Cocceius* Godman and Salvin. The latter genus is based on *pylades* which is separated generically from *bathyllus*. *Eudamus simplicius* has a costal fold and *Eudamus eurycles* has not. Now what is to be done—should a new genus be based on *simplicius* or should *simplicius* go with *Pholisora catullus* or with *Thorybes pylades*. If we follow methods in vogue it would be a new genus. Logically it would be tommyrot. One of my professors in college said it was all nonsense to try and teach people logic, as they were born either logical or illogical. Do the species with a costal fold belong to one genus or to many genera? The correlation under the generic divisions of *Pamphila* are enough to make one weep. For example take *Calpodes ethlius* and *Calpodes python*, *Limochroes manataaqua* and *Thymelicus cernes*. The latter two are placed in different genera and there is even doubt about their being distinct species.

The same remark applies to *Epargyreus tityrus* and *Rhabdoides zestos*.

Another example is *Lerema accius* and *Lerema deva*. Still another *Phycanassa viator* and *Phycanassa carolina*. One large genus like *Pamphila* should be divided, ***provided the division is based on a character or characters that hold good for the species separated.*** What use are genera if the species are placed by guess-work and show no true relationship? If the many generic divisions of the Heterocera show the same want of specific correlation, they are indeed in a sad state. Space and want of familiarity do not permit me to speak of these in detail. It may not be amiss to point out that there is no relationship between *Psychophora sabinii* Curtis and *b. immaculata* Skinner, as they belong to different families.

Comparative anatomy is an interesting study and the anatomical differences in insects should be made known, but it does not follow that every species that shows some anatomical difference is a new genus. It should not be forgotten that a classification is to facilitate study and identification, and that it is not an exposition of comparative anatomy. We need someone to go over the genera and place them on a firmer foundation and properly correlate the species. The genera of the world would have to be taken into account to do this properly.

Dr. Scudder's genera are often based on flimsy characters or none at all. The common *Thecla melinus* is put into *Uranotes*. This genus differs from the others in having "the inner transverse stripe on under surface of hind wings with only shallow or zigzag indentations." *Habrodias* (*Thecla grunus*) "with tail of hind wings triangular."

Some divisions in *Thecla* are "hind wings tailed" and "hind wings not tailed." This in some cases would place one species in two genera. In other cases genera are based on color alone. Many genera not used in the list have been proposed. Why would it not have been logical to have used them all? Dr. Dyar has put into the synonymy many described varieties based on color, etc. Perhaps he is right in the individual cases, but he is certainly wrong from a comparative stand point. All should go or none. For instance, he sinks *fumosus* a color variety of *Danais plexippus*, and describes as new, *altaurus* as a variety of *Parnassius clodius*, because it has yellow spots instead of red.

The list shows many incongruities. Let us hope that bringing them so prominently into notice will have a tendency to cure the evil.—H. S.

In the *Journal of the Association of Military Surgeons, Vol. xii, No. 2. pp. 84-107* (February, 1903), C. S. Ludlow, M.Sc., publishes a paper entitled: "Classification, geographical distribution and seasonal flight of the mosquitoes of the Philippine Islands." The author describes as new species, *Anopheles pseudobarbirostris* and *A. philippinensis*. The paper is illustrated by figures showing structure, and has many interesting notes on the various species.—W. J. F.

Doings of Societies.

A meeting of the Entomological Section of the Academy of Natural Sciences of Philadelphia was held Jan. 22d, Mr. Philip Laurent presiding. Fourteen persons present. Mr. W. D. Denton, visitor from Wellesley, Mass. Dr. Calvert exhibited and made some remarks on the Odonata described in the February NEWS. Mr. Rehn exhibited the roaches belonging to the genus Homœogamia. The box contained all the species, including a recently described one from New Mexico. The type was unique until the speaker and Mr. Viereck had taken eleven specimens. Mr. Bradley again referred to the specimens of the family Mymaridæ and decided that the genus was closest to *Anagrus*, and possibly a new species. There were some characters that led him to think the species might represent a new genus.

Mr. Rehn called attention to a paper by C. W. Leng on the Cicindelidæ of the pine-barrens of New Jersey (Jour. N. Y. Ent. Soc.). The speaker described the characters of this very interesting region. Many of the plants show boreal types. Mr. Wenzel said there was but one species of *Cicindela* found on the plains that was not found in the general pine-barren district. Mr. Denton exhibited a ♂ of the rare and beautiful *Ornithoptera paradisea* from German New Guinea. Also *O. crœsus* ♂ from the island of Batchian. Dr. Calvert exhibited a paper or envelope for insects sent by Mr. Williamson. It had a special device for keeping the paper closed.

HENRY SKINNER, *Recorder*.

A meeting of the American Entomological Society was held February 26. Dr. P. P. Calvert, President, in the chair. Thirteen persons were present. Mr. H. W. Wenzel referred to an article in the NEWS by Mr. Chas. Schaeffer on *Derobrachus*. The Horn material labelled *geminatus*, the speaker said, was not that species but *forreri*. Mr. Wenzel exhibited his fine series of the species in the genus and pointed out how they could be readily separated.

Mr. Henry L. Viereck read a paper on the Aristotle Society as follows: In this city there is a modest organization, the Aristotle Society. The name indicates what a broad field of work the Association may aspire to, and this name has been chosen because it was desired to add to the advancement of Natural History and exclude discussion or effort in no department thereof. Most of the members are interested in entomology and it has been their aim to add to the knowledge of our local insects from a faunistic point of view. Lately this intention has crystalized into the beginning of a movement toward a list of the insects of Pennsylvania on the general plan of the admirable list of New Jersey insects. We anticipate the co-operation of specialists in the various orders to make identifications and invite all to aid us, particularly the

Entomological Society of Western Pennsylvania. Political boundaries are, of course, not exactly the thing to have for faunistic work, but the step is a good one and in the right direction. When such State lists are published entomologists will be encouraged to add new records, and then when we know more of the Biotic zones of the country, the data will be available for the study of the natural divisions of the land, the faunistic states of Nature's union. Fortunately the necessity of attaching labels to specimens, indicating the exact locality in which they were captured, has been firmly established, so that at present insects bearing only State labels are almost as worthless as those bearing no label at all. Furthermore, there is a marked tendency to note some of the more apparent habits with a view toward ascertaining certain facts, as in the bees for instance, whether they be oligotropic or not. There has been a reluctance to note the year of capture; this should not be, because it will interfere with studies having in view the periodicity in the appearance of species.

The same speaker gave the following new records for Hymenoptera: *Bombus scutellaris* Cress. Four workers, Anglesea, N. J., viii, 8, 01, on Asclepias pulchra. (Vier.) *Tachytes breviventris* Cress. Clementon, N. J., viii, 27, 99 (Vier.). *Trypoxylon johnsoni* Fox. Riverton, N. J., vii, 15, 00 (C. W. Johnson). *Trypoxylon albitarse* Fab. Del. Water Gap, N. J., vii, 11, 99 (C. W. Johnson). *Mellinus bimaculatus* Say. Westville, N. J. (Fox). ♀ at Lucaston, N. J., ix, 17, 01 (E. Daecke). *Hoplisus phaleratus* Say. Del. Water Gap, N. J., vii, 8, 99 (C. W. Johnson). *Ammophila pictipennis* Walsh. Riverton, N. J., also Staten Island (W. T. Davis). See N. J. list. *Myzine interrupta* Say. Riverton, N. J., ix, 21, 02 (C. W. Johnson).

Dr. Calvert spoke of the value of such lists. Mr. Rehn mentioned the paucity of records for Orthoptera in the State. Mr. Snyder spoke of the value of putting the year of capture on all insects. Mr. Bradley suggested keeping year records for new finds. Mr. Rehn exhibited some Myremecophilous insects from Texas sent to him by Prof. Wheeler. He specially mentioned *M. nebrascensis*, a small cricket, and *Attaphila*, a genus of roaches, the type of a new sub-family. *Homœogamia bolliana* was also in the collection.

Mr. Laurent exhibited a specimen of *Exedrium halicarniæ* Streck. ♀ taken at Enterprise, Florida, by Dr. Castle and determined by Dr. Skinner, who said it might prove to be a large Southern ♀ form of *Ellema coniferarum*. In this case the genus and species would fall, but the name might be retained to indicate a variety.

Dr. Calvert stated that while the Southern mammals were smaller than those found North, in insects the case was often the reverse. He also said since describing *Telagrion daeckii* he had received a female specimen (unfortunately imperfect) from Prof. Needham. A specimen of *Lestes eurinus* was exhibited, which had been taken on Staten Island by Mr. W. T. Davis.

HENRY SKINNER, *Secretary.*

The 56th meeting of the Chicago Entomological Society was held in the John Crerar Library on Thursday, February 19, 1903. Thirteen members present.

The meeting was called to order by Vice-President Healy. Prof. Needham gave a very interesting talk on wing venation, illustrating his subject by sketches, charts and drawings. He spoke especially on the formation of wing cells in Neuroptera, and the variability of venation in the stone flies (Plecoptera).

Mr. Tower reported, on behalf of the Executive Committee, that application for membership, etc., in the Chicago Academy of Sciences, had been made in due course. Mr. Kwiat read the reply of the Academy, which stated, among other things, that "those who applied were elected to active membership, and permission was granted them to form a section."

Mr. Kwiat then read the By-Laws as drawn up by the Executive Committee. They were duly ratified.

After some informal discussion the meeting adjourned.

A. KWIAT, *Secretary pro tem.*

The March meeting of the Newark Entomological Society was held on the 8th, President Angelman presiding, and thirteen members present. The curator of Coleoptera reported that there are 365 species (876 specimens) in the society's collection. Mr. Dickerson showed several pieces of wood in which wood-boring larvæ had worked and fallen prey to woodpeckers.

The genus *Hydræcia* was chosen as subject for next meeting's discussion.

After an informal talk on collecting prospects the meeting adjourned.

OTTO BUCHHOLZ, *Secretary*.

At the February meeting of the Feldman Collecting Social held at the residence of Mr. H. W. Wenzel, 1523 South Thirteenth Street, Philadelphia, thirteen persons were present.

Dr. Skinner spoke of a moth recently received by Mr. Laurent from Dr. Castle, which proved to be *Excdrium halicarniæ*. This makes a second record for the species, the present specimen having been taken at Enterprise, Florida, April 20. The subject was discussed by Messrs. Smith, Laurent, Skinner and Castle.

Prof. Smith stated that in mud received from ponds in South Jersey had been found mosquito eggs which hatched into larvæ. It was found that these eggs were hatching in water at a temperature below freezing point, in some cases it being necessary to break through the ice to make the investigations. These larvæ were apparently *Culex canadensis*, and were no doubt responsible for the early swarms of mosquitoes found in March and April.

Dr. Castle reported that he had found mosquitoes flying early this month at Riverton, N. J.

Mr. Johnson exhibited a species of *Psilota* taken at Manumuskin, N. J., April 28, by Mr. Daecke. Two species of this genus had been described by Mr. Macquart, but from doubtful localities. Mr. Daecke's specimen is *P. buccata*; and *P. flavipennis* had been taken at Round Mountain, Texas. The separating characters of the two species were described, of which the venation is the most important.

Mr. F. Haimbach was re-elected a member of the society.

WILLIAM J. FOX, *Secretary*.

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N. A. Lepidoptera and their living pupa wanted. Will give in exchange exotic Lepidoptera.—Denton Brothers, Wellesley, Mass.

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I have a complete set and index of Insect Life, also some odd numbers to exchange for works on Coleoptera not in my library.—L. H. Joutel, 164 East 117th Street, N. Y.

Lepidoptera—Odonata.—Wish to secure specimens of Butterflies and Dragonflies from North Carolina, of species not in my lists or collections. Correspondence invited.—Franklin Sherman, Jr., Dept. Agr., Raleigh, N. C.

Wanted.—North American *Geometridæ*, eastern and southern species (many of the commonest). Offered Lepidoptera, Coleoptera and Hemiptera, many good species, from British Columbia.—Geo. W. Taylor, Wellington, B C.

Catocala Andromache.—Will be supplied in exchange to a few of the larger collections while my duplicates last. O. C. Poling, Quincy, Illinois.

Please Notice.—After October 15th, 1902, my address will be College Station, Brazos Co., Texas.—E. Dwight Sanderson.

Wanted.—Geometers, named or unnamed, in exchange; also noctuids and Microlepidoptera.—Wm. H. Broadwell, 275 High St., Newark, N. J.

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Pupæ Exchange.—Crysalids of H. Maia and others; also cocoons to exchange for other native pupæ and cocoons. W. T. Buxton, 152 Walnut St., Somerville, Mass.

Wanted.—Cocoons *Attacus angulifera, ceanothi, gloveri, A. luna, E. imperialis*, to exchange for butterflies and moths. *Catocala* in papers from Illinois.—Adolf Mares, 1671 W. 23d St., Chicago, Ill.

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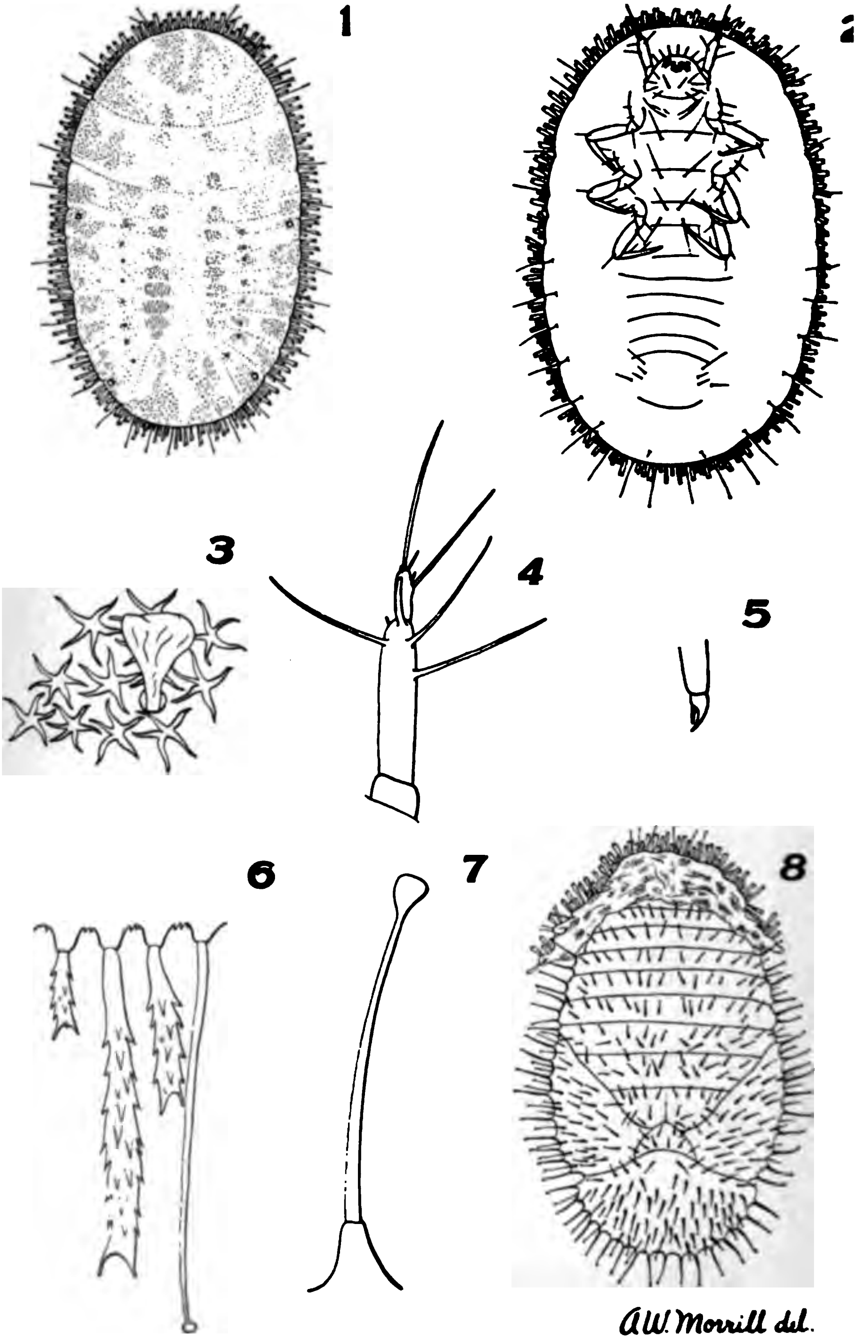

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Notes on the Early Stages of Corylophodes Marginicollis Lec.

BY AUSTIN W. MORRILL, B. SC., Massachusetts Agricultural College, Amherst, Mass.

The adults of this species were found in large numbers on the under surface of the leaves of a European horse-chestnut on the college grounds about the first of September, 1902. On examination a fungus was found in abundance, growing principally on the under surface of the leaves, and upon the mycelium of this the larvæ and adults of the beetle were observed to feed. The fungus was determined by Mr. H. A. Ballou of the Botanical Department of the college, as *Uncinula flexuosa* Pk. Specimens of the adult beetle were sent to the Division of Entomology U. S. Department of Agriculture for determination. In a letter they say of it: "The small black beetle which you send is *Arthrolips marginicollis* Lec., of the family Corylophidæ. The species is extremely common throughout the eastern portions of North America, occurring among decaying leaves. The family Corylophidæ is placed in our catalogues near the Coccinellidæ but differs from the latter in many important characters."

The only references to this insect which I have been able to find in literature are the following:

Corylophus marginicollis Le Conte, Proc. Acad. Nat. Sci. Phila., vol. vi, 1852-3, p. 143.
Arthrolips marginicollis Le Conte and Horn, Classification of Coleoptera of N. A., 1883, p. 113.
Corylophodes marginicollis Casey, Jour. N. Y. Ent. Soc., vol. iv, 1900, p. 63.

I have not seen Matthews' "Monograph of the Coleopterous Families Corylophidæ and Sphæriidæ" (London, 1899), where probably mention is also made of this species.

Full grown larva. (Plate VI, Figs. 1-6).—Length 1.5 to 1.9 mm., breadth .84 to 1.12 mm. Form broadly elliptical, flattened, resembling a much magnified crawling larva of a scale insect or of an Aleyrodes. Color gray with brownish markings. Prothorax large, rounded anteriorly, extending in front of the head; tips of antennæ the only parts of the head which can be seen from above when the larva is at rest. When crawling about in search of food, the head may be protruded so that its tip is also visible from above. The thoracic segments above occupy nearly the whole of the anterior half of the body; behind these are nine abdominal segments separated by indistinct sutures. All around the margin are closely set spines of three kinds (Fig. 6): simple, long slender spines; knobbed at the tip; and shorter spines of variable length, at the base thicker than the other two kinds and gradually increasing in thickness toward the tip, bearing many barbs which project outwardly; at the tip is a cup like depression surrounded by two or more barbs. Of the first kind of spines there are only eight; two on each side near the posterior margin of the prothorax, one on each side near the posterior margin of the mesothorax and one on each side near the posterior margin of metathorax. Of the second kind there are but six; three on each side of the terminal segment of the abdomen. The third kind occurs in large numbers all around the margin, two hundred and forty-eight in one specimen by actual count. On the dorsal surface are the spiracles, a pair on each of the first eight abdominal segments. These form a row on each side of the abdomen about half way between the lateral margin and the middle line of the body. They are nearly circular in form, and surrounded by a chitinous ring. Near the anterior lateral margin of the seventh and eighth abdominal segments on each side is a circular opening larger and more conspicuous than the spiracles and like them surrounded by a chitinous ring. The third to eighth abdominal segments inclusive are all more or less constricted in the middle. The extra space thus gained is occupied by the terminal segment (9th) which in the middle is about one-fifth the entire length of the body. The dorsal surface is marked on each side with three interrupted longitudinal brownish bands which lose their individuality on the first and last segments of the body. One band is a little to one side of the mid-dorsal line; between this and the corresponding band on the opposite side the body is usually somewhat discolored by the contents of the alimentary canal. A second band is between the first and the margin of the body, on a line with the spiracles. The third band is along the margin of the body. These bands examined under high power objectives (⅕ in. obj., 1 in. E. P.) show irregular ridges radiating from central points (Fig. 3). At intervals between these ridges are little circular openings through the integument from some of which little balloon-like appendages or sacs protrude—probably sense orgns of some sort—which under low power objectives appear like glistening points.

The ventral surface of the body (Fig. 2) is gray without markings. The head appears to arise from the posterior portion of the ventral part of the prothorax and is capable of considerable protrusion. Seen from below it is roundish, bearing numerous tactile (?) hairs. A minute simple eye, dark red in color, is situated on each side underneath and slightly behind the base of the antennæ. Antennæ composed of three subcylindrical segments, the basal segment short and thick; the middle segment five times as long as the basal one and a little narrower; bearing three long slender spines on its outer half and one shorter stouter one near its tip. The terminal segment which is about one-third as long as the middle segment and is more slender, bears a long slender spine just beyond its middle and another at the tip. In addition to these spines already described minute ones are also found on the last two segments. Mouth parts yellowish in color. Mandibles toothed, (labial or maxillary) minute, bearing tactile hairs. The legs are slender; coxæ, trochanters, femora and tibiæ being well developed and each bearing one or more slender spines, the tarsus consisting of a single segment, apparently in two parts; a stout curved pointed portion and a slender shorter pointed piece arising near its base—the whole resembling a crustacean chela (Fig. 5). Between the legs of the right and left sides of the body are four pairs of long slender spines arising from minute papillæ. The anal opening is situated about one-sixth the length of the body from the caudal margin, is difficult to distinguish, and is surrounded by numerous slender spines of various lengths arising from minute papillæ. The segmentation of the body from below is indistinct except in the middle and at the extreme sides. Near the posterior margins of the third to eighth abdominal segments a short distance in from the edge, on each side, a long slender spine arises from a minute papillæ. These spines are directed outwardly, and when the larva is viewed from above appear to arise from the margin. A short distance from the caudolateral margin of the last segment, on each side, is a very minute spine corresponding in position to those of the ventral side of the other abdominal segments.

Before pupating the full grown larva rests quietly on a leaf or other object for three or four days, the body appearing to become more rounded in the middle and to pull away from the larval skin at the posterior margin. The skin finally splits near the head, gradually slips back and remains surrounding the posterior end of the pupa which by this time has become firmly attached to the object upon which the insect has been resting.

Pupa (Figs. 7-8). Length 1.5 mm. Width .82 mm. Form, oval, the head end being the more broadly rounded. Color, glistening greenish white; the sides of the abdominal segments are shaded with dark, apparently not due to surface coloring. Body above and on the sides covered with knobbed spines (Fig. 7) of nearly equal size. The metathorax above shows a median groove from front to rear. The ventral surface is smooth and glistening white, naked except for a few slender spines on the sides of the thorax and a few on the abdomen. The legs, antennæ and mouth parts appear as indistinct swellings.

The following is the original description of the adult by Le Conte:

Corylophus marginicollis.—Rotundatus, niger nitidus, thorace basi obtuso producto, lateribus et apice testaceo marginato, elytris punctulatis, pedibus. Long .03.

Middle and Southern States, on leaves.

Body rounded, convex shining black. Thorax semicircular, margin testaceous, base obtusely angulated in the middle, posterior angles obtuse, elytra strongly punctulate, a little rounded at the apex. Legs yellow testaceous.

EXPLANATION OF PLATE VI.

Figures 1, 2 and 8 outlined with Abbe Camera Lucida.

Fig. 1. Dorsum of full grown larva, X 33 diam.

Fig. 2. Venter of full grown larva (somewhat larger specimen), X 33 diam.

Fig 3. Portion of dorsal surface of full grown larva, X 500 diam.

Fig. 4. Left antenna of full grown larva, from below, X 150 diam.

Fig. 5. Tarsus of full grown larva, X 175 diam.

Fig. 6. Marginal spines from anal segment of full grown larva, X 316 diam.

Fig 7 Spine from dorsum of pupa, X 300 diam.

Fig 8. Dorsum of pupa, showing moulted larval skin at caudal (upper) end, X 33 diam

The Moths (Heterocera) of Eastern Pennsylvania.

By Philip Laurent.

(Continued from page 113.)

GEOMETRINA.

Geometridæ.

Prochœrodes clemataria *S. & A.*, rare.
Prochœrodes transversata *Dru.*, common.
Prochœrodes furciferata *Pack.*, rare.
Tetracis lorata *Grt.*, common.
" crocallata *Gn*, common.
Metanema quercivoraria *Gn*, rare.
" inatomaria *Gn.*, rare.
Drepanodes olyzonaria *Walk.*, rare.
Caberodes confusaria *Hbn.*, common.
Ennomos magnarius *Gn.*, common.
" subsignarius *Hbn.*, "
Azelina hubnerata *Grt.*, rare.
Endropia serrata *Dru.*, rare.
" obtusaria *Hbn.*, rare.
" effectaria *Walk.*, rare.
" bilinearia *Pack.*, rare.
" " var. minoraria *Hulst.*, rare.
" armataria *H S*, common.
" amœnaria *Gn.*, *rare.*
" vinulentaria *G. & R.*, rare.
" pectinaria *Schiff.*, rare.
" hypochraria *H.-S.*, common.
" duaria *Gn.*, rare.
Epirranthis obfirmaria *Hbn.*, rare.
Therina fervidaria *Hbn.*, rare.
" endropiaria *G. & R.*, rare.
Metrocampa margarittata *L.*, rare.
Antepione depontanata *Grt.*, rare.
" sulphurata *Pack.*, rare.
Angerona crocataria *Fabr.*, common.
Microgonia limbaria *Haw.*, rare.
Plagodis keutzingaria *Pack.*, rare.
" fervidaria *H.-S.*, rare.
" phlogosaria *Gn.*, rare.
" alcoolaria *Gn.*, rare.
Probole amicaria *H. S.*, common.
" " var. alienaria, *H. S.*, rare.
Aplodes mimosaria *Gn*, rare.
" " var. latiaria rare.
" inclusaria *Walk.*, rare.
Synchlora glaucaria *Gn.*, common.
" rubrifrontaria *Pack.*, rare.
Nemoria subcroceata *Walk*, rare.
" gratata *Pack.*, common.
" pistaceata *Gn.*, common.
Eucrostis chloroleucaria *Gn.*, common.
Dyspteris abortivaria *H.-S.*, common.
Ephyra pendulinearia *Gn.*, rare.
" cucularia var. myrtaria, *Gn.*, rare.
Acidalia ossulata *Hbn.*, rare.
" punctofimbriata *Pack.*, rare.
" productata *Pack.*, rare.
" insularia *Gn.*, common.
" nivosata *Gn.*, common.
" inductata *Gn.*, common.
" purata *Gn.*, rare.
" ennucleata *Gn.*, common.
" quinquilnearia *Pack.*, rare.
Calothysanis amaturaria *Walk.*, rare.
Calledapteryx dryopterata *Grt.*, rare.
Stegania pustularia *Gn.*, rare.
Gueneria basiata *Walk.*, rare.
Deilinia erythremaria *Gn.*, rare.

Corycia vestaliata *Gn*, *rare*.
Semiothisa præatomata *Harv.* rare.
" minorata *Pack.*, rare.
" multilineata *Pack.* rare.
" enotata *Gn.*, common.
" granitata *Gn.*, rare.
" ocellinata *Gn.*, rare.
Marmopteryx gibbicostata *Walk.*, rare.
Eufitchia ribearia *Fabr.*, common.
Fidonia notataria *Walk.*, rare.
Hæmatopis grataria *Fabr.*, common.
Caterva catenaria *Cram.*, common.
Aspilates coloraria *Fabr.*, "
Cleora semiclusaria *Walk.*, "
Stenotrachelys approximaria *Hbn*,, rare.
Bronchelia hortaria *Fabr.*, common.
Boarmia pampinaria *Gn.*, common.
" umbrosaria *Gn.*, rare.
" larvaria *Gn.*, rare.
" humaria *Gn.*, rare.
" crepuscularia *Tr.*, common.
Tephrosia canadaria *Gn.*, rare.
" anticaria *Walk.*, rare.
Paraphia subatomaria *Grt.*, rare.
" deplanaria *Gn.*, common.
Biston ursarius *Walk.*, rare.
Eubyia cognataria *Gn.*, common.
" cupidaria *Grt.*, rare.
" quernaria *S. & A.*, rare.
Phigalia strigataria *Minot.*, rare.
Paleacrita vernata *Pack.*, rare.
Anisopteryx pometaria *Harr.* rare.
Heterophleps trigutta *H.-S.*, common.
Heterophleps harveiata *Pack.* rare.
Heliomata cycladata *Walk*, rare.
Baptria albovittata *Gn.*, rare.
Lobophora atroliturata *Walk.* rare.
" anguilineata *Grt.*, rare.
" limitaria *Walk.*, rare.
Philereme albosignata *Pack.*, rare.
Calocalpe undulata *Linn.* common.
Phibalapteryx latirupta *Walk.*, common.
Phibalapteryx intestinata *Gn.* rare.
Anticlea vasaliata *Gn.*, rare.
Petrophora testata *Linn.*, rare.
" diversilineata *Hbn.* common.
Petrophora atricolorata *G. & R*, rare.
Rheumaptera brunneicillata *Pack.*, rare.
Rheumaptera fluctuata *Linn.*, rare.
" lacustrata *Gn.*, common.
Rheumaptera hastata *Linn.*, common.
Ochyria ferrugata *Linn.*, rare.
" designata *Hbn.*, rare.
Plemyria fluviata *Hbn.*, common.
" multiferata *Walk.*, rare.
Eupithecia implicata *Walk.*, rare.

(To be continued.)

Mr. William Beutenmueller, Curator Department of Entomology, Amer. Mus. Nat. Hist., New York, was married to Edna Libbie Hyatt on April 15th.

The Brooklyn Institute has sent Charles Schaeffer and Jacob Doll to Texas to collect insects for the Museum. They started by steamer, Saturday, April 4th, for Galveston, en route to Brownsville. They intend to remain three or four months. Both of these gentlemen are good collectors and they will doubtless find many new and rare insects.—L. H. Joutel.

A New Genus of the Orthopterous Subfamily Phaneropterinae.

By JAMES A. G. REHN.

ALOGOPTERON* n. gen.

A member of the Ephippithytæ, and related to *Polichnodes* Giglio-Tos, but differing in the centrally emarginate fastigium, the peculiar venation, the non-sulcate femora, the heavily spined lower margins of the anterior femora and tibiæ and the spinose sterna.

Fastigium bituberculate; vertex deplanate. Eyes ovate, strongly exserted. Pronotum elongate, the lateral angles rounded; the anterior margin subsinuate, the posterior strongly rounded; lateral lobes much longer than high, the lower margins subrotundate. . Tegmina very narrow and elongate, the apex anteriorly rounded; median vein branching from the discoidal vein almost at the very base of the latter, extending unbranched, parallel with and very close to the same for the whole length of the tegmen; discoidal and humeral vein fusing a short distance from the base and apparently not separating again; anterior ulnar vein extending parallel to the sutural margin for almost the whole length of the tegmen, dividing into forks near the apex of the same; transverse veins dividing the surface into rectangles, except at the apex where the disposition becomes more irregular. Wings elongate, much exceeding the tegmina in length, the apex acuminate. Anterior femora and tibiæ bearing on their lower lateral margins series of very long and slightly curved spines, anterior and median femora non-sulcate beneath, the respective tibiæ being rounded above. Posterior femora slender, non-sulcate beneath and supplied with small spines on the apical portion of lower margins; spines of the upper margins of the posterior tibiæ rather small. Ovipositor short, not equalling the pronotum in length, moderately curved, the apical margins very minutely dentate.

Alogopteron carribbeum n. sp.

Type: ♀; Turrialba, Costa Rica. Collected by Schild and Burgdorf. (Coll. U. S. Nat. Mus.)

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* *i. e.*, unusual wing.

Form very slender. Fastigium with the emargination between the two processes rectangular; vertex rather flattened. Eyes extending forward quite a distance beyond the fastigial processes, short diameter of the eye rather less than the interspace between the two. Basal joint of the antennæ with an obtuse-angulate node on the lower surface, these organs being slender and elongate. Pronotum rounded, elongate, the lateral angles not at all marked, a median sulcation extending over the posterior two-thirds; posterior portion produced and scutellate, lateral lobes with the margin subrotundate, the posterior portion diagonally trimmed. Tegmina very slender, the anterior border slightly emarginate. Wing very much elongate, the apex slightly rounded anteriorly, the area of the radial veins apically with irregular polygonal cells. Spines on the anterior femora three in number on the inner side, four on the outer; on the anterior tibiæ five in number on each margin, decreasing in size distally. Posterior tibiæ with the spines on the superior margins increasing in number distally.

General color pale pea-green, a brilliant line of emerald green decorating the median region of the pronotum. Eyes chestnut, the ovipositor suffused apically with same tint. Body and limbs touched with pale yellowish.

MEASUREMENTS:

Length of body	16.5 mm.
Length of pronotum	3.7 "
Width of pronotum	1.7 "
Length of tegmina	12.2 "
Greatest width of tegmina	.3 "
Length of wing	19.5 "
Length of hind femora	10.5 "
Length of ovipositor	3.5 "

Two specimens of this species from Porto Rico, collected in 1898 by Mr. Busck, were submitted to me by Mr. A. N. Caudell. They are identical with the type, thus giving a considerable range to the species.

Out of Due Season.

By JOHN H. COOK, Albany, N. Y.

That the season of 1902 was a most remarkable one from the lepidopterist's point of view, I think no one will deny: and that such a season, with its unusual rainfall and generally moderate temperature should have affected appreciably the development of many of our insects, especially of the more susceptible Lepidoptera, is hardly to be wondered at. I have made some notes on a few of the species to be found in the neighborhood of this city (Albany, N. Y.), which I think will be of interest.

A larva of *Ceratomia amyntor* found on September 8, 1901, pupated two days later in a pail filled with earth. June, July and August (1902), having passed, I decided that the insect was dead and disinterred it. The pupa, however, presented a perfectly healthy appearance and I placed it one of my breeding cages, where it remained without giving any sign of life until December 5th, when I found it rolling merrily over the floor of its place of confinement. Since then it has repeated the performance several times and, unless some untoward circumstance prevents, should emerge during the coming summer.

Another lepidopteron which refused to believe that there was any warm season last year, was brought to the State Museum a short time ago by Mr. R. K. Colville of this city. It was a male *Papilio polyxenes* and emerged on February 11, 1903, from a chrysalis formed by a caterpillar taken in September, 1901. Although the specimen never fully developed, a careful examination thereof failed to reveal the slightest departure from the design or structure of the usual form disclosed from wintering chrysalids.

On August 18, 1902, I discovered three larvæ of *Polygonia comma* (on elm) in the stage following the second moult; the next day another in the stage following the first moult, and on August 23d I found six others in the stage preceeding pupation —these last in quite another locality. The chrysalids formed by these caterpillars disclosed the imagos between September 4th and 27th, and of the nine two only were of the form *harrisii*, six were *dryas*, and the other, a female, a peculiar form intermediate between these recognized varieties and of which I have seen but one other example. That *dryas* has been found among the second brood I am certain, but in many years collecting this is the first instance which has ever come under my personal observation.

On July 26th I took, in my garden, a badly worn female *Polygonia interrogationis umbrosa*, and fastened to one of her hindmost legs by several strands of what apparently was spider thread, were three eggs. These hatched on the 28th and although one larva died without tasting food, the others were reared to maturity. One emerged on August 27th, the other on August 31st, and both were females and *umbrosa*. This I think is a very unusual occurrence.

I might add that, while the appearance of almost every species due after the first of June, was delayed from one to six weeks, the broods of *Feniseca tarquinius* were thrown into the most hopeless confusion of all. In this locality there are three broods anually appearing at fairly regular intervals; but last season while collecting the larvæ I found on the same day (August 1st) eggs, small, medium sized and full grown caterpillars, chrysalids and butterflies; on August 21st the same state of affairs was noted except that no eggs were found and fewer butterflies, and these all females.

It seems to me that the coming season should be prolific in captures of the unusual, especially among the hibernating individuals of such species of *Polygonia* as appear in distinct seasonal forms.

◆

Agathobanchus Aequatus.

By J. Chester Bradley.

AGATHOBANCHUS Ashmead.

Banchus Say, Sec. Ed., ii, p. 701.
Agathobanchus Ashmead, Class., Ichneum., p. 97, 1900 (tabulated).

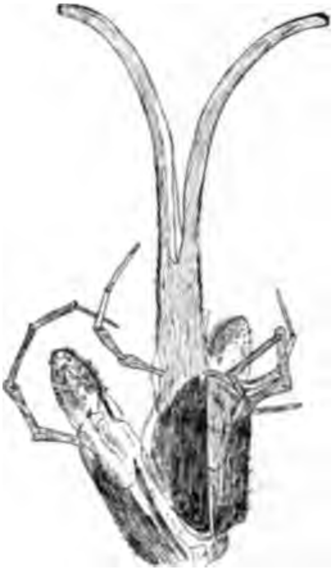
Head transverse, temples narrow; mouth parts very abnormal, the labium prolonged into a long tube reaching to the insertion of the second pair of legs, this is sometimes split in two; antennæ filiform, polyarticulate, the third joint about as long as the fourth and fifth together. Thorax robust, slightly broader than the head, mesonotum without parapsidal furrows; wing with a trapezoidal areolet, disco-cubital nervure not angularly broken, without the stump of a vein, transverse medial nervure in forewings not interstitial with basal, submedian cell slightly longer than median. Abdomen sessile, flattened laterally, broadly truncate posteriorly; ovipositor somewhat exserted.

A. æquatus Say.

Banchus æquatus Say, Sec. Ed., ii, p. 701.
Type of *Agathobanchus*, Ashmead, Class., Ichneum., p. 97, 1900.

Shining black; face, part of legs, ventral abdominal segments, basal half of wings, ring around antennæ and scutellum yellow; remainder of wings fuscous. Length 11–12 mm.

♀ Head shining black, face below antennæ, a short arc above and behind each eye, mouth parts except tips of mandibles brownish yellow, a deeply impressed brown pit and groove on each side of face below the eyes; first three or four joints of antennæ brown, next thirteen yellow, and remainder black; clypeus shallowly emarginate; the labium is prolonged into a long tube, somewhat similar to the structure of the *Bombidæ;* it is in the female specimen split in half apically, and is long enough to reach the insertion of legs. Head sessile, mesothorax dome-shaped, prominent; thorax entirely polished black, roughened, epimeron somewhat angled carinate on the lower part of its anterior angle; mesonotum, without parapsidal furrows; a short oblong groove or pit on the central posterior portion of epimeron; a fine sparse brown pubescence on the anterior portion of mesothorax the sides of the thorax about the edges of each sclerite, where also a few punctures are mostly found; scutellum gibbous, yellow; propodeum black, polished, not carinate, spiracle on each side thereof circular; wings fuscous, nervures brown, but together with entire wing golden yellow at base, yellow color extending to near the apex of the cubito-discoidal cell and in the marginal to the apex of the stigma, which is long and narrow; areolet large, trapezoidal, second transverse cubital nervure convexly curved; cubitus without a stump of vein, but strongly angled half way between the discoidal and first transverse cubital nervures; a white spot on cubitus between the angle and the first transverse cubital, one on second transverse cubital and two on second recurrent nervure just below cubitus, legs black, tibiæ and tarsi yellow, posterior tibiæ dark at apex, posterior femora extending slightly beyond the tip of the abdomen; posterior and middle tibiæ with two apical spurs, in middle legs the longer spur is about equal to the second tarsal joint, in the posterior equal to third and fourth together; first joint of posterior tarsi longer than second, third and fourth together, second slightly shorter than third and fourth together. Abdomen black, sessile, flattened laterally, broadly truncate at apex, apex of first dorsal and the fourth anterior ventral segments yellow; ovipositor



exserted, shorter than the truncation of the abdomen, slightly shorter than the first joint of the posterior tarsi. Length 12 mm.

♂ Differs from foregoing description of female only in the following points, temples and narrow line between and eyes yellow, antennæ except apical eight or nine segments entirely reddish yellow. Mesothorax not so broad or prominent, a deep red band on each side joined behind, forming a figure similar to the Greek capital letter omega inverted (℧); the anterior angle of epimeron somewhat more strongly carinate; the anterior femora yellow, and also a very small spot in the centre of the propodeum yellow. Abdomen more petiolate, strongly clavate at apex, compressed laterally and not truncate. Length 11 mm.

Riverton, N. J. (♂ September 8, ♀ August 31). Collected by Mr. Charles W. Johnson. Indiana (Say).

As this insect does not seem to be well known, there being no references to it, so far as I know, since Say's original description, except Mr. Ashmead's making it a type of *Agathobanchus*, I have considered it advisable to redescribe it here more fully than Say has done, from the two excellent and beautiful specimens collected by Mr. Johnson—the only ones I have seen. Say does not mention the sex of his type, which is, of course, destroyed. The peculiar structure of the mouth parts makes this insect notable.

Note on Galeruca.

By CHAS. DURY, Cincinnati, Ohio.

Twenty-five years ago in the vicinity of this city, I found rather commonly, a *Galeruca* which Dr. Horn identified as *externa* Say. Recently Mr. Schwarz doubted the occurrence of *externa* here. I sent him a specimen and he pronounced it the European *Galeruca tanaceti* Linn. without doubt, and the first record of its occurrence in the U. S. They were taken by sweeping low vegetation in shady places. The most recent date I have is June 3, 1902. A series of 14 specimens pinned in my box which I have collected in Cincinnati, Ohio, Michigan, Colorado, New Mexico and received from California vary in minor details, so that no two are alike, and any of them might fit the description of either *tanaceti* or *externa*. Might the two species be identical?

Notes on Some California Myrmecophiles.

BY CHARLES THOMAS BRUES.

There have recently come into my hands, through the kindness of Dr. William M. Wheeler, some specimens of interesting myrmecophiles collected and observed by Dr. Harold Heath in California. One of them, a histerid beetle, belonging to the genus *Hetærius* has been previously well known, but I am enabled to record some additional facts concerning it; another, the larva of a syrphid fly is quite different from any of the hitherto described forms of myrmecophilous *Microdon* larvæ, and seems worthy of extended description.

COLEOPTERA.

HISTERIDÆ.

Hetærius tristriatus Horn. (Fig. 1.)

A male and female of this peculiar beetle were collected in a nest of *Formica fusca* L., sub. sp. *subpolita* Mayr.,* at Pacific Grove, Cal., during the early part of April, which is the only season of the year when these insects are to be found. Dr. Heath gives the following short note concerning their actions, "when first observed they were about an inch below the surface of the ground and were being jostled about in the excited mob of ants. To the latter they gave little notice, but rolled or tumbled over each other; and finally when quiet had been restored, remained motionless for ten or fifteen

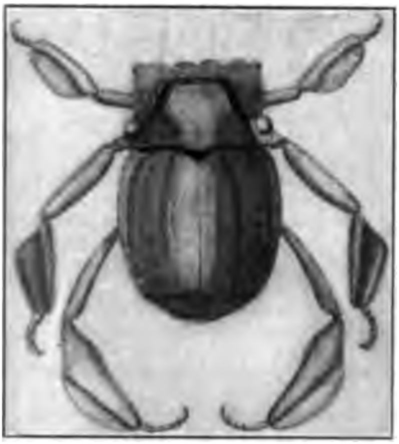


FIG. 1.

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* Wasmann in his Kritisches Verzeichniss der Myrmekophilen und Termitophilen mentions *H. tristriatus* as occurring with *Formica fusca*, var. *subænescens* Em , in Colorado and with *F. obscuripes* For., in Washington; while Schwarz records it also as living in the nests of *F. schaufussi* at Helena, Montana.

minutes." Schwarz* has observed the ants pick up another species of Hæterius and carry it to a place of safety in the depths of the nest. These beetles are evidently fearless of the ants, as they are well provided with the tufts of yellow glandular hairs characteristic of mymecophilous Coleoptera, besides being almost invulnerable on account of their very hard bodies and retractile legs.

DIPTERA.

SYRPHIDÆ.

A most remarkable dipterous larva was collected in a nest of *Monomorium minutum* Mayr., also at Pacific Grove during April. So much does it resemble the slug-like larvæ of the Syrphid fly, *Microdon*, that I have no hesitancy in considering it as a Syrphid larva. It is, however, so different in many respects from the larvæ of *Microdon* that it is, no doubt, a member of some other allied genus. Larvæ of *Microdon* occurring in as widely separated localities as France,† the United States, Mexico‡ and Paraguay,§ are of an almost identical and extremely peculiar type. The present form departs widely from this, as can be seen from the following description and appended figures.

DESCRIPTION OF THE LARVA. Fig. 2, *a*, *b*, *c*.)

Length 4.75 mm.—Broadly oval, much smaller and broadly convex above, flat below. Ventral surface separated from the dorsal by a delicate carina from which extends a delicate membrane. This membrane is traversed by a series of fine thickenings (see Fig. 1, *a*). At the anterior extremity of the ventral surface is the indistinctly tri-segmented oral papilla, behind which are irregular transverse rows of very small tubercles, interrupted at the middle and at the sides. Just exterior to the membrane is a single series of closely placed dart-shaped fleshy bristles, about 33 in number. Above these are other similar bristles, four on each side and a pair just each side of the anterior extremity. The stigmal protuberance is placed well up upon the posterior surface of the body; conical and sharply constricted at the base. Body elsewhere smooth but not shining. Color in life lemon yellow; after preservation in alcohol yellowish brown above and fuscous below.

Habitat. Nest of *Monomorium minutum* Mayr. Pacific Grove, California.

The occurrence of this enormous larva with such an extremely small ant as *Monomorium minutum* Mayr., seems very strange and is, perhaps, one of the most striking cases on record of a myrmecophile which is so much longer than the ant with which it makes its abode.

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* *Loc. cit.*

† Poujade, Ann. Soc. Ent. France (6), iii, 1883, p. 23, pl. 1.

‡ Wheeler, Psyche, 1901.

§ Sharp, Cambridge Nat. Hist., Vol. vi, p. 502.

Dr. Heath gives in a letter the following ethological note concerning the relation with the *Monormorium*: "When I pulled over the stone under which this particular colony was concealed, my attention was attracted by a hemispherical light lemon-yellow colored mass, which was attached to the underside of the stone on the ceiling of one of the burrows. After the first stages of confusion had passed, and I had shaded the nest from the direct rays of the run, this body was the object of much attention on the part of the ants. For fully half an hour, from two to ten of them continually surrounded it or mounted themselves upon it, moving their antennæ with great rapidity. Occasionally one would attempt to carry it to a place of safety. This performance was continued for fully twenty minutes after all the larvæ had been transferred to a place of safety." From this account it is plainly evident that these huge and brilliantly colored animals live on quite peaceable terms with their diminutive hosts.

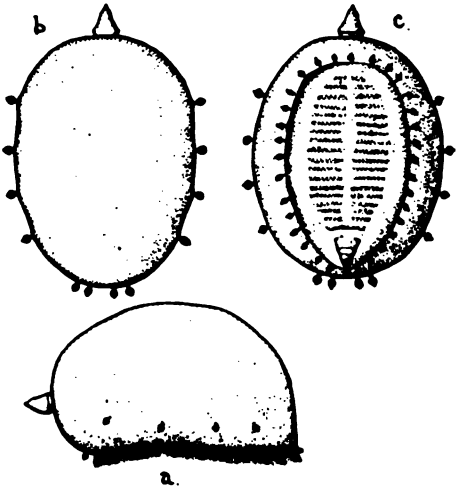

FIG. 2.

List of Dragonflies (Odonata) From North Carolina, Especially From the Vicinity of Raleigh.*

BY C. S. BRIMLEY.

The following list is based on specimens collected by the writer during the years 1899–1902, mainly in the valley of Walnut Creek, southeast of Raleigh, while a number of other specimens, including some additional species, were taken on seining trips to Crabtree Creek near its junction with Neuse River (July 10, 1902), and to Neuse River at Poole's bridge near the mouth of Walnut Creek (July 3 and August 18, 1902), both places being about six miles from Raleigh, and about one mile distant from each other, Crabtree entering the Neuse higher up than Walnut. The collecting on these three trips was done by Mr. F. Sherman, Jr., N. C. State Entomologist, and the writer, and also by Mr. C. O. Houghton on the last of the three.

The list probably includes the majority of the species of the suborder Anisoptera to be found at Raleigh; the second suborder, the Zygoptera is poorly represented in the list, little effort having been made to capture or identify members of this group until the latter part of 1902. Mr. Sherman has also furnished me with records of the different species he has taken at Raleigh and in other parts of the State.

Thanks are due to Messrs. R. Martin, Leblanc, France (for whom collecting was done in 1899 and 1900); J. G. Needham, Lake Forest University; R. P. Currie, U. S. National Museum, and J. S. Hine, Ohio State University, for identification of specimens, and to Mr. Sherman for valuable assistance rendered.

[With Mr. Brimley's consent, I have added in brackets [ ] a number of records of North Carolina Odonata known to me. Those which are cited simply as "North Carolina A. N. S." (collection of Academy of Natural Sciences of Philadelphia), may possibly have been gathered by Morrison, and if so, are presumably from Morganton.—P. P. CALVERT].

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[*] This paper was presented at the first annual meeting of the North Carolina Academy of Science, November 29 and 30, 1902.

1. **Progomphus obscurus** (Rambur).

Fairly common in summer in sunny spots along the banks of Walnut Creek usually resting, when not in flight, on bare patches of sand or mud close to the water's edge. A number of nymphs were observed transforming, from about 10 A.M. to 1 P.M. on June 5, 1900, resting on bare patches of sand, or the bare clay of the banks, close to the water's edge but not climbing up plants. This species was also observed at Poole's bridge, July 3, 1902, resting, when not on the wing, on bare rocks projecting above the surface of the water. Occurs from about the end of May to the end of July.

2 **Gomphus notatus** Rambur.

A single male, July 3, 1902, among thick weeds close to the bank of Walnut Creek near Poole's bridge; a female by Sherman at Lumberton, Robeson Co., September 6, 1902.

3. **Gomphus exilis** Selys.

A single male in woods near Walnut Creek, May 2, 1902.

4. **Gomphus sordidus** Hagen.

Our commonest Gomphid; more or less common every year in open woods, and along the borders of woods, in April and May. When flushed from their resting places, the flight is usually a gentle upward rise, followed by a sudden dip downward abruptly taking the insect out of the observer's field of view and thus causing it apparently to vanish. On April 15, 1902, a large number of the exuviæ of full grown nymphs of this species were found along a small stream with a muddy bottom and one was observed transforming. The nymphs had crawled only just beyond the edge of the water to transform.

[5. **Gomphus parvulus** Selys. N. Carolina, A. N. S., 1 ♂].

[6 **Gomphus descriptus** Banks, var. **borealis** Needham. Magnetic City, July 24, 1899, A. P. W. Ley, 1 ♀ identified by Prof. Needham].

[7. **Gomphus consanguis** Selys. N. Carolina, by Morrison, Selys, Comptes Rendus, Soc. Ent. Belg. 1879, p. lxvii].

8 **Dromogomphus spinosus** Selys.

One taken by Sherman, July 3, 1902, at Poole's bridge while resting on a bare rock in the middle of Neuse River, but no others seen; another taken by the writer as it flew up from a sandbar in Crabtree Creek, July 10, 1902, and others, apparently this species, also seen. Their habits were much like those of *Progomphus obscurus*.

[9. **Ophiogomphus carolinus** Hagen and Needham. 2 ♂, N. Carolina, A. N. S. 1 ♂ 2 ♀, N. Carolina, C. U. lot 35, Mus. Comp Zool.*].

[10. **Tachopteryx thoreyi** Hagen. N. Carolina, A. N. S., 1 ♂].

11. **Gomphæschna furcillata** (Say).

A teneral male taken by myself, April 28, 1899, as it was resting on the trunk of a tree in mixed woods, and another not far from the same place, April 25, 1900. Sherman took an adult male, at Raleigh, June 5, 1901.

12. **Boyeria vinosa** (Say).

Homestead, Graham Co., September 11, 1902, by Sherman. [Magnetic City, July 27, 28, 1899, 1 ♂ 2 ♀, A. P. W. Ley; Blowing Rock, one female nymph, July 8, 1898, J. P. Moore; coll. P. P. C.].

13. **Nasiæschna pentacantha** (Rambur).

One specimen taken flying over a small pool of water, July 1, 1902; it was quite tame compared with other Æschnids, not being frightened away by several unsuccessful sweeps of the net.

14. **Epiæschna heros** (Fabr.)

Rather common in late spring and early summer; very often flies at dusk around houses and among shade trees; occasionally enters houses; has been taken from May 1 to June 28.

15. **Anax junius** (Drury).

Our commonest Æschnid; has been observed from April 22 till late in September, but does not become common till August;

[* Comparison of these 2 ♂ in the A. N. S. with the single ♂, M. C. Z., shows that the latter—presumably the individual from which Prof. Needham's figures (Can. Ent. xxxi, p. 237, ff. 8 and 17) were made—has the extreme tips of the superior appendages broken off, as may also be seen by a careful examination of the specimen, and that the superior appendages are in reality much more sharply pointed in this species than the figures cited show. The 2 ♂, A. N. S., further show variations in the width of the interval between the two branches of the inferior appendage and in the shape of the two branches, as they have the interval much wider and the tip of each branch less deeply emarginated than in the ♂ M. C. Z.—P. P. C.].

flies mostly in the low grounds and not on the uplands like the preceding.

16. **Cordulegaster maculatus** Selys.

A female taken in woods, April 21, 1902.

17. **Cordulegaster diastatops** (Selys).

A male taken in woods, April 12, 1902.

18 **Cordulegaster Sayi**? Selys.

Prof. Needham identifies some Cordulegaster nymphs taken in November, 1901, and January, 1902, as probably belonging to this species.

[19. **Cordulegaster erroneus** Hagen. Morganton, July to September, by Morrison. Selys, Bull. Acad. Belg. (2) xlvi, p. 689. 1878].

20 **Didymops transversa** (Say).

One teneral female taken April 22, 1902; two nymphs caught in the seine at Poole's bridge, August 18, 1902.

21. **Macromia illinoiensis** Walsh.

One specimen taken July 28, 1899, while it was flying over the uplands: one nymph caught in the seine at Poole's bridge, August 18, 1902.

22. **Macromia tæniolata** Rambur.

A male taken on Walnut Creek, July 31, 1902; its actions were similar to those of *Progomphus obscurus* and *Dromogomphus spinosus*, for which latter species it was mistaken before its capture. A female was taken resting on the small limbs of an oak, August 30, 1902, on the uplands. The female has the triangles of all the wings and the internal triangles of the forewings crossed, the male has all of them free from cross-veins.

23. **Tetragoneuria cynosura** (Say).

Tenerals of this species are very common in woods and in sunny spots near woods in the latter end of April; they seem to stay in such situations for a short time after they have attained their full strength; what becomes of them later I cannot say, although I have seen a few flying over water later on. Some idea of the numbers of the tenerals can be gained from the fact that I caught 65 specimens of this and the next species in one morning in April, 1902.

24. **Tetragoneuria semiaquea** (Burmeister).

Occurs at the same time and in the same places as the preceding, but is only about one-third as common. [One male, North Carolina, A. N. S.].

25. **Tetragoneuria complanata** (Rambur).

A single *Tetragoneuria*, taken April 27, 1899, with about twice as much black on the base of the hind wing as in any *T. semiaquea* we have taken was referred to this form by M. Martin.

26. **Somatochlora tenebrosa** (Say).

Rather rare in summer, flying over fields and open ground by the side of small streams and marshes. Flies high and is hard to catch. A dead male was picked up in Crabtree Creek by Sherman, July 10, 1902.

27. **Somatochlora filosa** (Hagen).

A female, Lumberton, Graham Co., September 6, 1902, by Sherman.

28. **Perithemis domitia** (Drury).

Common in June and July. Tenerals fly in upland fields often resting on the flowers of the oxeye daisies; adults fly over pools of standing water.

29, **Sympetrum vicinum** (Hagen).

Common in November, flying mostly in low ground meadows and not over water; one taken also August 21, 1902.

30. **Sympetrum albifrons** (Charpentier).

Rather rare in July and August, tenerals in woods, adults flying over marshes.

[31. **Sympetrum obtrusum** Hagen. Blowing Rock, 1 ♀, July 3, 1898, J. P. Moore; in coll. P. P. C.].

32. **Celithemis ornata** (Rambur).

A male, Four Oaks, Johnston Co., July 29, 1902, and another male at Southern Pines, Moore Co., August 15, 1902, by Sherman.

33. **Celithemis elisa** (Hagen).

A male, Charlotte, Mecklenburg Co., June 9, 1902, by Sherman.

34. **Pachydiplax longipennis** (Burmeister).

Very common in summer, tenerals in woods and adults flying over standing water. This species is most common in May, June and July, and occurs sparingly a month or more later. Taken by Sherman at Clayton, Johnston Co., May 22, 1902.

35. **Mesothemis simplicicollis** (Say).

Rare in grassy low grounds in June and July. Taken by Sherman at Lumberton, Robeson Co., September 6, 1902.

36. **Libellula basalis** Say.

One female taken and several of both sexes seen in Green's rock quarry, August 1, 1902.

37. **Libellula cyanea** Fabr.

Very common in summer: the tenerals occur mostly among broomstraw in woods and fields, the adults fly over marshes and standing water. Occurs from the last of April till July, and sparingly a month later (latest date recorded August 21, 1902.) Taken by Sherman at Clayton, Johnston Co., May 22, 1902.

[38 **Libellula flavida** Ramb. (*plumbea* Uhler). One female, Mitchell Co., July, 1892, by Dr. Henry Skinner. A. N. S.].

39. **Libellula vibrans** Fabr.

Rather common in summer flying over marshes and standing water; the largest and most sluggish of the Libellulas. Occurs from May to August (May 19 to August 21). Taken by Sherman at Beaufort, Carteret Co., August 11, 1902.

40. **Libellula axillena** West.

Common in summer from June to August, flying over standing water: taken by Sherman at Beaufort, August 11, 1902.

41. **Libellula incesta** Hagen.

Two males, July 3, 1902; two more males, August 26, 1902. Indistinguishable on the wing from the preceding.

42. **Libellula semifasciata** Burmeister.

Rather common in spring. Taken by Sherman at Clayton, Johnston Co., May 22, 1902.

43 **Libellula pulchella** Drury.

Occurs from the latter part of May to the middle or end of September: commonest in August, flies mostly over marshes and wet meadows. Taken by Sherman at Blowing Rock, Watauga Co., August 29, 1902; Oakdale, Alamance Co., August 22, 1902, and in Durham Co., August, 1902.

44. **Plathemis lydia** (Drury).

Common all the season from April to October, having the longest seasonal range of any of our dragonflies. Tenerals occur on the uplands, adults in meadows and marshes and along streams. Taken by Sherman at Homestead, Graham Co., September 11, 1902, and Charlotte, Mecklenburg Co., April 25, 1902. [Blowing Rock by J. P. Moore, July 8, 1898; in coll. P. P. Calvert.]

45. **Tramea carolina** (L.).

Not very common, occurs in June, July and August; the tenerals fly over uplands and are very hard to catch. In August, 1901, I caught a number flying over a pool of water in Green's rock quarry. Taken by Sherman at Beaufort, August 11, 1902.

46. **Calopteryx maculata** (Beauvois).

Occurs along shady streams from the latter end of May till September. Taken by Sherman at Homestead, Graham Co., September 11, 1902.

47. **Hetærina americana** (Fabr.)

Common on Neuse River at Poole's bridge, July 3 and August 18, 1902; also observed on Crabtree Creek, July 10, 1902. [Asheville, September 12, 1900, by C. C. Adams, *teste* E. B. Williamson].

48. **Hetærina tricolor** (Burmeister).

Rare on Walnut Creek in September.

49. **Lestes rectangularis** Say.

Rather common in wet meadows during portions of the summer, occurs from May till September.

50. **Lestes vigilax** Hagen.

A male, Lumberton, Robeson Co., September 6, 1902, by Sherman.

51. **Argia putrida** (Hagen).

Observed on Neuse River, July 3 and August 18, 1902, also on Crabtree Creek, July 10, 1902. Not observed along Walnut Creek. Taken by Sherman at Smithfield, Johnston Co., July 30, 1902, and at Lumberton, Robeson Co., September 6, 1902.

52. **Argia tibialis** (Rambur).

Found in June, July and August along the edge of streams or pools, flitting along the banks or resting among the bordering vegetation. Poole's bridge, July 3 and August 18, 1902, and on Crabtree, July 10, 1902. Lumberton, Robeson Co., by Sherman, September 6, 1902. [Morganton, 1877, Morrison, 1 ♂ in Mus. Comp. Zool.; 1 ♂ N. Carolina, A. N. S.]

53. **Argia apicalis** (Say).

Occurs at the same times and in the same situations as the preceding species, and was also taken on all three seining trips. Smithfield, Johnston Co., by Sherman, July 30, 1902.

54. **Argia sedula** (Hagen).

Poole's bridge, August 18, 1902, and on Crabtree, July 10, 1902: also by Sherman at Raleigh, July 15, 1902, and Smithfield, Johnston Co., July 30, 1902.

55. **Argia violacea** (Hagen).

Occurs at the same times and in the same places as *A. apicalis* and *tibialis*, but perhaps less common on the larger streams. Not taken at Poole's bridge nor on Crabtree. Taken by Sherman at Charlotte, Mecklenburg Co., June 9, 1902.

[56. **Argia bipunctulata** (Hagen). N. Carolina, Morrison, 6 ♂ 7 ♀ in Mus. Comp. Zool.].

57. **Erythromma conditum** Hagen.

Rather common in April and May, tenerals in woods, adults in marshes.

58. **Anomalagrion hastatum** (Say).

May 15 and June 22, 1899; two females taken in August, 1902.

59. **Nehalennia posita** (Hagen).

Three males, August, 1902, taken in marshes.

60. **Ischnura ramburi** Selys.

Beaufort, Carteret Co., August 11, 1902, by Sherman.

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and, as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form, will be given free, when they are wanted; and this should be so stated on the MS., along with the number desired. The receipt of all papers will be acknowledged.—ED.

PHILADELPHIA, PA., MAY, 1903.

THE advent of the collecting season is always a time of particular interest and looked forward to with pleasure by all entomologists. Now that active work is under way there are several things that occur to us. How many are there who do not have accurate data on their specimens? There should not be a single person neglecting this most important rule. The use of accurate data was one of the very greatest entomological events. How many persons are allowing their collection to be converted into *Anthrenus* and *Dermestes*? Modern boxes and modern methods are the key-note for the prevention of this trouble. How many of us are collecting rubbed and damaged specimens? There is much room for improvement in this matter. Those collecting in the mountainous parts of the West should put the altitude on each specimen taken. This is not necessary when taken at named places of known or ascertainable altitude. Don't forget to add some fact to what is already known in entomology.

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Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

MR. WM. T. DAVIS has published (Proc. Nat. Sci. Ass., Staten Island, viii, No. 3, Feb. 9, 1901) a record of the occurrence of ***Lestes eurinus*** Say in Staten Island. This species may therefore be added to the New Jersey list of Odonata.—P. P. C.

COBWEBS FIGURE IN MURDER TRIAL.—In the trial at David City, Neb., recently, of Mrs. Harvey Lillie, charged with the murder of her husband, the theory of the defense that a burglar killed Harvey Lillie was given a hard blow. The State presented ex-Sheriff Derby, who testified that he examined the keyhole of the lock alleged to have been forced by the burglar. The lock and keyhole were filled with cobwebs and dust on the morning following the murder.—*Newspaper.*

KIEFFERIELLA, a new name for *Kiefferia* Ashmead. In the last number of Psyche, I established a genus of Figitids under the name *Kiefferia* which I find is preoccupied in the Diptera. I propose therefore the name *Kiefferiella* in place.—WM. H. ASHMEAD.

ODONATA OF NEW JERSEY.—In looking over the current popular magazines I stumbled upon a recognizable figure of a nymph of *Hagenius brevistylus*, and a note which gives a new New Jersey locality—Wildwood Lake, P. O. Franklin Furnace. This was in the February *St. Nicholas*, p. 364. The editorial answer to the inquiry of the correspondent contained this remarkable contribution to the confusion of the terminology of the immature stages of insects: "The full grown dragonfly nymph changes its form from a slender creature to a broad, flat one, that has but little, if any, resemblance to the slender-bodied larva or to the adult" I am afraid I do not understand this. I suppose it is an entomological fragment, dressed up (or down) into that "correct literary form" which is the first requisite of a popular magazine, that expresses by suggestion, and which is freer to suggest when unhampered by facts. —JAMES G. NEEDHAM, Lake Forest, Illinois.

"NOTES ON A [JAPANESE] PARASITIC MOTH," U. Nawa, Gifu, Japan. —In the number of the *Insect World*, issued January 15, 1903 (vol vii, No. 1), U. Nawa publishes in English an interesting account under the heading, "Notes on a Parasitic Moth." He states that this moth is parasitic on *Pomponia japonensis*, *P. maculaticollis*, and *Graptopsaltria calorata* (Cicadidæ). He also mentions closely allied specimens on *Ricania japonica*, but neither species has been determined, nor is he certain whether they are distinct from each other. The life habits are given, and each form described, and the moth, its antennæ, wings, larva, pupa and cocoon, together with two of the parasitized hosts are figured in color.

This publication, now running in its seventh volume and usually printed entirely in Japanese, bears excellent witness to the scientific industry and attainments of that race. It is issued by that energetic worker, Y. Nawa, from his laboratories in Gifu, and one regrets in looking at its tempting pages and interesting illustrations, that he is not familiar with all languages.—J. CHESTER BRADLEY.

ON *Cystineura floridana*, Strecker.—In Lep. Rhop. Heter, suppl. No 3, p 24, 1900, Strecker described a *Cystineura* from Florida, to which he gave the name *floridana*.

Careful study of the species leads the writer to the opinion that this species is the same as *C. cana*, of Erichson.

In the description of *C. cana*, Erichson says that it is "very similar in form and marking to the Brazilian *C. hypermnestra*, the upper sides of the wings especially so, with the male more brownish gray."

A specimen of *C. cana*, identified by Strecker, in the writer's collection, is identical with *C. floridana*. Examination of specimens of *C. hypermnestra*, identified by Staudinger, show the close relationship with *C. cana*, in so much so, that if the specimens were brownish gray, they would correspond to the description of *C. cana*, by Erichson.

If, therefore, Strecker's identification of the writer's *C. cana* is correct and that of Staudinger for *C. hypermnestra* is correct and the description of *C. cana*, by Erichson exactly answers that of *C. floridana*, then it seems clear that *C. floridana* falls naturally into the synonymy of *C. cana*.—Levi W. Mengel, Reading, Pa.

SPIDERS AS ENEMIES OF DRAGONFLIES.—[The suggestion made in the February News, page 34, on this subject, has called forth the following remarks]. As to the possibility of there being some relation between tenerals in spider's webs and scarcity of imagoes, I doubt if the spiders are a very important factor. That is, in the boat house possibly, a considerable percentage of emerging species were captured, but the total number emerging in the boat house was relatively small to the total number emerging under more favorable conditions (no spiders) elsewhere. In the genus *Gomphus*, on several occasions, I have found apparent scarcity of imagoes due to the fact that they frequented unsuspected spots. For example, once in Tennessee I spent the day along the Cumberland. The river had been rising and falling so all exposed mud banks were wet and sticky. Up these mud banks nymphs of *G. vastus* had crawled and were crawling in great numbers. Many became so coated with mud that, this drying, they failed to emerge. Occasionally very recent tenerals would be shaken from bushes or grasses, but no imagoes were seen flying freely about during the day. That afternoon, as I was going home, about half a mile from the river, on a thinly wooded hillside, with a western exposure, bright in the light of the low sun, I found *vastus* literally by hundreds. They were abundant in a restricted area—possibly 100 yards long by 50 yards wide. I have had a somewhat similar experience with *G. crassus*. A friend of mine found *Cordulegaster* common in a ravine; a few days later not one was to be seen. *Dromogomphus spoliatus*, along the old canal-feeder at Ft. Wayne during the middle of an August day, may be very abundant, but they are not to be found at 8 A. M. and 5 P. M.—they have completely disappeared. You have noticed how *Æschna* and *Anax* will be found one day in flocks over fields and the next day not one can be seen. Moreover, in Indiana lakes I believe that the life of the nymph is as precarious and as full of vicissitudes as the life of the imago, and a wholesale destruction of tenerals would hardly permit of the balance being maintained. I do not mean that many imagoes are not destroyed, but I do not believe that a comparison of the number of exuviæ seen with the number of imagoes seen gives us a correct idea of the number of imagoes surviving.

In Tennessee nymphs of *Epiæschna heros* were very abundant in a ditch where I collected, but I never saw even a single imago. On the other hand in adjoining swamps three species of *Tramea* were sporting by hundreds as imagoes, and I found during an entire spring only one exuvia. *Tachopteryx thoreyi* is known as a nymph by only the one specimen taken by Atkinson, though Graf has searched diligently for others, but Graf, Atkinson and myself have taken numbers of imagoes. I am afraid in the case of *Neurocordulia obsoleta* our ignorance is more responsible than the spiders for the few imagoes known. And I believe the same is true of *Ophiogomphus*.

In a carefully explored region, where observations have been made during all seasons for a period of years, when the habits and requirements of nymphal life necessitate a condition inconspicuous to us, and the habits and requirements of imaginal life permit conditions not inconspicuous to us, then our collections are filled with imagoes, while nymphs are rare; and in the same locality, but under exactly opposite conditions, we have many nymphs and few imagoes.

Then again, explained in the same terms, imagoes and nymphs of a species may be common, or imagoes and nymphs may both be rare, though I do not mean to say that all species are equally abundant or approximately so, and that we have only to discover the habitat of a rarity to obtain it in numbers. Doubtless the new *Somatochlora provocans* is rarer than some of the *Libellulas*, for example, but doubtless also, it is relatively more abundant than the observations hitherto made would indicate.—E. B. WILLIAMSON, Bluffton, Indiana, Feb., 1903.

While admitting the justness of Mr. Williamson's criticisms in a general way, there are several facts to be pointed out which seem to support the idea suggested, viz.: that spiders may be an important factor in diminishing the numbers of dragonflies. Thus we also saw living spiders of the same genus [*Dolomedes*] at other points on Lake Hopatcong, running over the stones and the small wooden piers so common on the shores. The significance of the boathouse observations is this: the shelter there afforded protected the spiders' webs and exuviæ, the remains and exuviæ of the dragonflies, from destruction by the weather and so preserved a record of events similar to those which doubtless took place outside the boathouse, but of which no trace remained at the time of our visit. I do not deny that the causes cited by Mr. Williamson are also powerful agents in decreasing the Odonata, but I venture to suggest that destruction by spiders is a factor whose importance deserves investigation. The whole matter of the "vital statistics" of insects is one about which we have few exact data.

In this connection it may be *a propos* to record an unpublished observation. On the 18th of August, 1900, I saw that many spiders (*Epeira stellata* Hentz) had woven orb-like webs, 4-6 inches in diameter, in the grass and sedges bordering a shallow arm of Mecox Bay, south of Bridgehampton, Long Island, N. Y. Within the length of one-tenth of a mile, I found four of these webs containing each a single dragonfly and one web containing two. The insects were *Enallagma durum* and *E. civile*, fully colored, dead, more or less enshrouded in silk, and some partly eaten.—PHILIP P. CALVERT.

Doings of Societies.

The association known as "The Pacific Northwest Economic Entomologists, met in Spokane, Wash., on February 3, 4, and 5. The experiment station entomologists of Montana, Washington, California and Idaho, were present, namely, R. C. Cooley, C. V. Piper, C. W. Woodworth and J. M. Aldrich. Professor A. B. Cordley, of the Oregon station, was detained at home, otherwise the representation would have been complete for the territory covered.

Reports were handed in on topics that had been selected for comparative work one year ago; they covered some phases of the life of the codling moth, with the subject of number and time of sprayings. The subject of co-operative work for next year was extensively discussed, and Professor Woodworth was made a committe to propose a definite plan to the other members in the near future.

In the discussion of insects of the year, Professor Cooley described the spread of the codling moth in Montana. He had found the cocoons abundantly in freight cars, by which medium they might be transported almost any distance even after the apples had been taken out. Since last year he had had further assurances of the presence of the plum curculio in the Bitter Root valley, west of the continental divide, but had not yet seen the insect there.

Professor Piper gave an abstract of a new bulletin on the sulphur, lime and salt wash. Extensive experimentation had convinced him that one pound of lime, one pound of sulphur and four gallons of water, or in that proportion, gave an absolutely effective winter spray. He had no difficulty in killing

100 per cent. of the scale at one application on a large commercial orchard. It need not be applied hot.

Professor Aldrich read the manuscript of a forthcoming bulletin on the codling moth. He had found three broods of the moth at Lewiston, Idaho, but only two elsewhere. In the higher altitudes, where the moth is not numerous, he had not been successful in controlling it with one or two sprays; although two had been better than one, still some worms survived. Paris green had given decidedly better results than arsenate of lead in an extensive test.

The existence of Phylloxera on grapes in North Idaho having been mentioned, Prof. Woodworth stated that in his opinion the winged form of the insect is produced but rarely in California, perhaps not oftener than once in ten years.

The meeting being held in connection with that of the Northwestern Fruit Growers' Association, the entomologists appeared on the program of the latter in the following addresses:

The Prevention of Small Losses by Insects, R. C. Cooley.

The Lime, Salt and Sulphur Wash, C. V. Piper.

The Peach Worm, C. W. Woodworth.

The Codling Moth in High Altitudes, J. M. Aldrich.

Before adjournment, the entomologists chose Prof. Cordley chairman of the organization for the ensuing year, and voted to meet next time in Corvallis, Oregon.

The foregoing notes cover only a few of the interesting matters that were discussed in the meeting. J. M. A.

At the meeting of the Feldman Collecting Social held on March 18th at the residence of Mr. H. W. Wenzel, 1523 South 13th Street, Philadelphia, twelve persons were present.

A letter from Mr. A. Busck was read and ordered filed.

Mr. Bland exhibited specimens of *Polistes*. These were taken recently flying around a lamp and also in his bedroom.

Prof. Smith spoke of the species of *Leucania*. He had recently been over the collection at Cambridge and found Morrison's types of *texana*. The specimens were originally described as being a variety of *phragmitidicola*; but, as a matter of fact, bear no relation to that species. Mr. Grote subsequently described this same form as *ligata*. Mr. Grote's name must sink as a synonym in favor of Mr. Morrison's. In looking over the collection of Mr. Philip Laurent he found a series of eight or more specimens of *L. flabilis* of which up to that time he had known the types only. The specimens were taken at Anglesea at sugar, and one of them was so like a typical *ligata*, that had the example come from Texas, there would have been no hesitation in giving it that name. The series does prove positively that *flabilis* is the same as *rimosa*, some of the examples agreeing perfectly with a specimen received from Dr. Thaxter and taken in Maine. It is more than likely that these three names will eventually have to be regarded as belonging to one species. Another interesting species seen in Mr. Laurent's collection is *extincta*, also taken at Anglesea, and which up to that time he had seen from the Newark district only.

Mr. Haimbach described a card index for recording duplicates.

WM. R. REINICK,
Secretary Pro tem.

A meeting of the Entomological Section of the Academy of Natural Sciences of Philadelphia, was held March 26th, Mr. C. Few Seiss presiding. Fourteen persons were present. Dr. Calvert exhibited the apparatus with which he labels specimens with generic and specific names. Metallic type is used and set up in a small holder made for rubber stamps. A printed form is used, on which is the name of the determiner: the name of the insect is added as above indicated. This scheme was devised for the Biologia Centrali-America collection of Odonata, as it will be distributed into various museums, so that it becomes necessary to accurately label each specimen. Mr. Hornig mentioned that Mr. Ilg had tried to keep *cynthia* and *luna* eggs alive through the winter by the use of cold, but they all died. Mr. Hornig asked if it would be possible to keep over winter eggs of species that normally live during that period in the chrysalis.

HENRY SKINNER, *Recorder.*

A regular meeting of the Entomological Section of the Chicago Academy of Sciences, (Chicago Entomological Society) was held in the John Crerar Library, Thursday evening, March 20th, 1903. Seven members present. Mr. Healy occupied the chair in the absence of the chairman.

Mr. Higley, on behalf of the Academy, reported that the By-laws of the Section had been passed upon at the last meeting, and had been accepted without amendments, and placed on record as By-laws of the Section.

Mr. W. L. Tower was scheduled for a talk on metamorphoses, but did not put in an appearance. Informal discussion, therefore, took the place of the regular program.

Mr. Higley described the interesting study and collecting trips which the Academy members had taken in previous years, and spoke of the prospects of similar excursions for the coming season. Several members of the section expressed a desire to participate: As is usual in the early spring meetings, many of the members had accounts to relate of the appearance of forerunners of the coming season.

The subject of a field day for the Section was broached, but no decision reached because of the early date.

JOHN COMSTOCK, *Recorder.*

The seventh regular quarterly meeting of the Pacific Coast Entomological Society was held on the evening of February 28th, at the residence of Mr. J. C. Huguenin, 1840 Fifteenth Street, San Francisco.

President Fuchs in the chair.

Twelve members responded to roll call. Six new members were elected. Dr. E. C. Van Dyke, acting as President *pro tempore*, Mr. Fuchs exhibited a box of native and exotic *Plusiotis*, with remarks upon their structural differences, life histories and distribution. Mr. L. E. Ricksecker recalled the time when James Behrens brought the first specimen to California from Arizona.

Dr. E. C. Van Dyke exhibited a box of American *Lucanidæ*, with remarks upon the several genera, and other biological facts of great interest relative to their life histories and distri-

Diptera.—*Rhamphomyia* of the world wanted. Will exchange for Texas or Illinois insects (not Lepidoptera).—A. L. Melander, The University of Chicago.

Wanted, by purchase or exchange, photographic prints and lantern slides illustrative of insect life.—W. L. W. Field, Milton, Mass.

Wanted—December, 1899, Entomological News. Address F. W. Friday, 17 Grace St., Pittsburg, Pa.

Wanted.—*Catocala* and *Sphinx* of the Northwest and Southwest in exchange for other native exotic and European butterflies and moths. Send list to Chas. F. Timm, 131 Ralph St., Brooklyn, N. Y.

Exchanges solicited in moths, butterflies of N. America. Catocalas preferred. Send lists to Jos. H. Reading, 775 N. Rockwell St., Chicago, Illinois

Lepidoptera from all parts of the world to exchange for species not in my collection.—Frank Haimbach, No. 1309 Allegheny Avenue, Philadelphia, Pa., U. S. A.

North American Butterflies wanted in exchange for Lepidoptera of Southern California.—P. H. Hart, Pasadena, Cal.

Butterflies for exchange. Expect to have limited number of *Œneis chryxus*, *P. smintheus*, *Basilarchia wiedemeyeri* and others during summer. Send lists of what you have.—A M. Hendee, Central City, Colo.

Lepidoptera.—Fertile eggs of *Argynnis diana* wanted—John Ruston, 10 Carlton Road, Workrop, Nottingamshire, England.

Will collect in all orders. Would like named or unamed Coleoptera in exchange Please write to G. Chagnon, P. O. Box 186 Montreal, Can.

Moths of Pennsylvania and New Jersey. The undersigned will give good exchange in cash or specimens for moths of Pennsylvania and New Jersey that are new to his collection. Send list of rare species only.—Philip Laurent, 31 East Mt. Airy Ave., Philadelphia, Pa.

Wanted.—Sphegidæ of North America, Mexico and the West Indies (as included in Cresson's Synopsis) for study in connection with a revision of the group. Material sent will be returned named as far as possible.—H. T. Fernald, Amherst, Mass

I will give Lepidoptera, publications or cash, for Smith's "Monograph of the Sphingids," published in Vol. xv, Trans. Ent. Soc., Acad. Nat Sciences, 1888.—H. H. Newcomb, 35 Court St., Boston.

Hymenoptera.—Will be pleased to send duplicates in return for identifications.—Charles Stevenson, 906 St. Urbain Street, Montreal, Canada.

Wanted for cash, fertile ova of *regalis*, *imperialis*, *triptogon modesta*, *Augulifera*.—H. M. Peinze, Northboro, Mass.

Will collect in all orders, insects of South East New England for Lepidoptera of North America.—L. W. Tilden, Box 54, New Bedford, Mass.

Wanted.—Fertile eggs, *Cith. regalis*, also all kinds *Thecla* and *Lycaena* for Lepidoptera from here.—H. M. Boyer, 220 Hudson Street, Reading, Pa.

Wanted.—Life histories in all orders of insects. Will pay cash or give exchange for same. Write what you have, and state lowest cash price.—Denton Bros., Wellesley, Mass.

Desirable Lepidoptera for exchange. Would like to receive lists of good species.—John Comstock, 1572 Ridge Ave., Evanston, Ill.

I will collect Lepidoptera, Coleoptera, Hpmenoptera, Hemiptera of this locality, in exchange for Diurnal Ledidoptera of the United States, or named Diurnals of foreign countries. Write at once.—M. E. Hoag, D. D. S., Oakville, Iowa, U. S A.

I will give Lepidoptera, publications or cash for Smith's "Monograph of the Sphingids," published in Vol. xv, Trans. Ent. Soc., 1888.—H. H. Newcomb, 35 Court Street, Boston.

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Heteronotus vulnerans.

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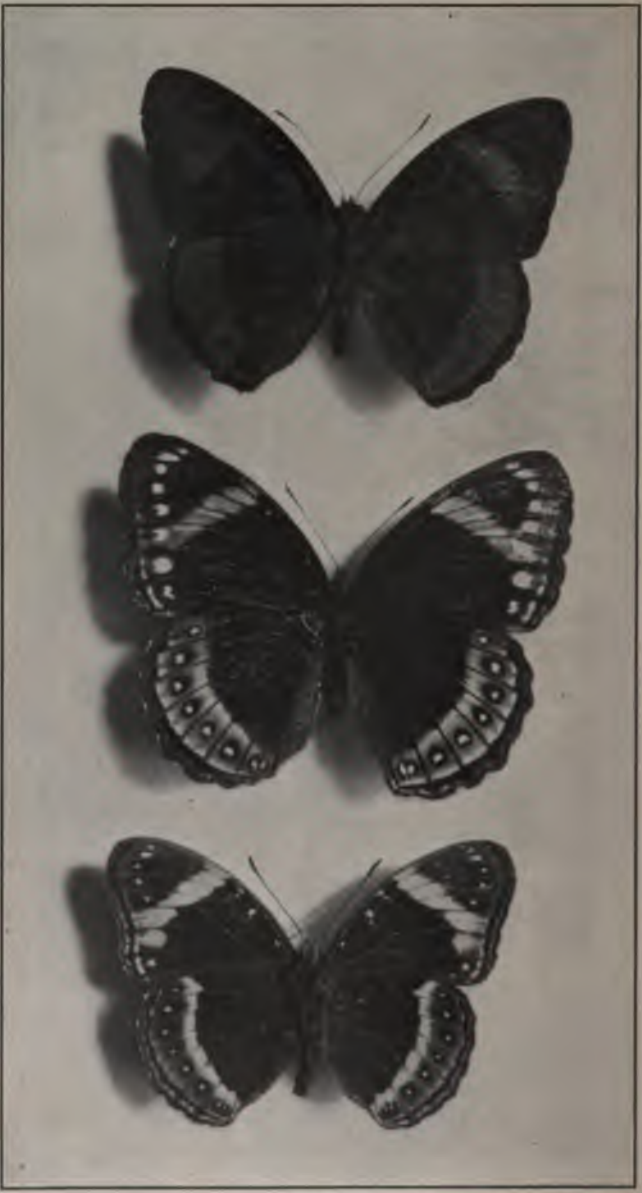

HYPOLIMNAS AURIFASCIA MENGEL

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XIV. JUNE, 1903. No. 6.

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A new species of Hypolimnas from New Hebrides.

LEVI W. MENGEL, Reading, Pa.

Hypolimnas aurifascia sp. nov.—Male. General color above brown, approaching black. On the anterior wings a broad band of orange extends from near the centre of the costal margin three-quarters the distance across the wing to the inner angle. On the inferior wings a broad band of orange runs parallel to the margin from the apex to the anal angle. This band varies in breadth from $\frac{3}{4}$ in. at the apex to $\frac{5}{16}$ at the broadest part, which is near the centre, to $\frac{3}{16}$ of an inch at the anal angle. This band is sharply cut and is not suffused at any point. A narrow band of the brown of the general color borders the exterior margin. In the centre of each nervule, in the orange band, there is a dark brown spot. Under sides of the male generally paler brown on the anteriors, lighter towards the apex. The orange bands show through, but become buff. A few small white spots show on the anteriors near the apex and along the costal margin near the base. The band of the inferiors is darker towards the exterior, and the row of brown spots of the upper surface are marked with small white spots. A narrow band of light buff passes near the margin, separating the broad band from the margin.

The female is of a generally lighter brown. The orange bands of the male are replaced by bands of buff. A row of white spots extends from near the apex to the inner angle, running parallel to the margin. A faint light band of buff begins midway between the apex and the angle, becoming more pronounced as it reaches the angle. This band separates the margin and the row of white spots. Inferior wings similar to the male. The brown spots in the centre of each nervule larger and marked with a small white spot. Under sides very similar to the upper surface, but lighter and the white spots better defined. Abdomen and thorax dark brown. Expanse, male, 2⅝ in.; female, 2¾ in.

Hab.—Santo, New Hebrides.

A New Variety of Tegrodera (Coleoptera).

BY HENRY SKINNER.

T. aloga n. var.—Head red, antennæ and collar black. Thorax red. Elytra bright yellow, reticulate; black between the reticulations, with apices black. There is a transverse piceous fascia, constricted in the middle of each elytron: elytral sutures black. Abdomen and legs black. The species varies in length from 14 to 26 mm.

Described from sixteen specimens taken on the banks of the Gila River, near Florence Arizona, May 4, 1903, by C. R. Biederman. There is no variation in the specimens, except in size. It differs from *latecincta* Horn in being more coriaceous, the reticulations being much coarser and showing the black background more conspicuously. The transverse elytral fascia in *latecincta* is wider and not constricted in the middle. It may be distinguished at once from *erosa* by the distinct black elytral suture. Dr. Horn considered *latecincta* a race of *erosa* and *aloga* is probably also a race of *erosa*.

A New Variety of Sphinx.

BY HENRY SKINNER.

Sphinx luscitiosa Clem. var. **una** n. var. This variety lacks entirely the buff color of the inner area of the inferior wings so conspicuous in the species. It is much darker on all four wings, and in markings is practically identical with dark examples of *Sphinx eremitus*, from which it differs in the smaller discal spot.

Described from a ♀ specimen received from Mr. Chas. F. Timm, of Brooklyn, New York, who raised it from larvæ which disclosed the normal form except in one additional specimen.

The Moths (Heterocera) of Eastern Pennsylvania.

By Philip Laurent.

(Continued from page 141.)

PYRALIDINA.

Pyraustidæ.

Margaronia quadristigmalis *Gn.*
nitidalis *Cram.*
Diathrausta pisusalis *Walk.*
Desmia funeralis *Hbn*, common.
Cindaphia bicoloralis *Gn.*
Phlyctænia extricalis *Gn.*
Nomophila noctuella *S. V.*, com.
Pyrausta octomaculata *Linn.*
" acrionalis *Walk.*, com.
" insequalis *Gn.*, com.
" signatalis *Walk.*
" niveicilialis *Grt.*, com.
" fumalis *Gn.*, com.
" futilalis *Led.*
" detritalis *Gn.*
" adipaloides *G. & R.*
" oxydalis *Gn.*
" thestialis *Walk.*
" ranalis *Gn.*, com.
" pertextalis *Led.*, com.
" æglealis *Walk.*, com.
" argyralis *Hbn.*, com.
Mecyna reversalis *Gn.*
Pantographa limata *G. & R.*
Crocidophora serratissimalis *Zell.*
Crocidophora tuberculalis *Led.*, com.
Loxostege similalis *Gn.*, com.
" dasconalis *Walk.*
" helvialis *Walk.*
" obliteralis *Walk.*
" cereralis *Zell.*
Eustixia pupula *Hbn.*, com.
Scoparia centuriella *S. V.*
" libella *Grt.*
Evergestis straminalis *Hbn.*, com.
" rimosalis *Gn.*
Lipocosma perfusalis *Walk.*
Cataclysta fulicalis *Clem.*, com.
Homophysa fulminalis *Led.*
" glaphyralis *Gn.*, com.
" sesquistrialis *Hbn.* "
Hydrocampa albalis *Rob.*
" icciusalis *Walk.*
" stenialis *Gn.*

Pyralididæ.

Galasa rubidana *Walk.*
Fabatana oviplagalis *Walk.*
Pyralis farinalis *Linn.*, com.
" costalis *Fabr.*, com.
" olinalis *Gn.*
" sodalis *Walk.*
Aglossa cuprealis *Hbn.*
Epipaschia superatalis *Clem.*
Tetralopha humerella *Rag.*

Phycitidæ.

Acrobasis angusella *Grt.*
Pinipestis zimmermanni *Grt.*
Nephopteryx ovalis *Pack.*
Salebria contatella *Grt.*
Euzophera semifuneralis *Walk.*
Honora oblitella *var.* undulatella *Clem.*
Plodia interpunctella *Hbn.*, com.
Peoria hæmatica *Zell.*

Galleriidæ.

Melissoblaptes fuscolimbellus *Rag.*
Galleria mellonella *Linn.*, com.

Crambidæ.

Argyria nivalis *Dru.*, com.
" auratella *Clem.*, com.
" pusillalis *Hbn.*
Chilo plejadellis *Zinck.*, com.
" densellus *Zell.*

Crambus leachellus *Zinck.*
" præfectellus *Zinck.*
" laqueatellus *Clem.*
" agiatellus *Clem.*, com.
" " *var.* alboblavellus *Zell.*
" albellus *Clem.*
" girardellus *Clem.*, com.
" ruricolellus *Zell.*
" vulgivagellus *Clem.*, com.
" decorellus *Zinck.*
" elegans *Clem.*, com.
" teterrellus *Zinck.*
" interminellus *Walk.*, com.
" caliginosellus *Clem.*, com.
" luteolellus *Clem.*

Pterophoridæ.

Platyptilia ochrodactyla *Hbn.*
" carduidactylia *Riley.*
Alucitia cretidactylia *Fitch* ?
" inquinata *Zell.*
" monodactyla *Linn.*
" homodactyla *Walk.*
" paleacea *Zell.*
" subochracea *Wlsm.*
Oxyptilus periscelidactylus *Fitch.*
" tenuidactylus *Fitch.*com.

TORTRICINA.

Tortricidæ.

Teras hastiana *Linn.*, com.
" nivisellana *Wlsm.*
Cacœcia rosaceana *Harr.*, com.
" obsoletana *Walk.*, com.
" fervidana *Clem.*, com.
Loxotænia clemensiana *Fern.*
Ptycholoma melaleucana *Walk.*
Pandemis limitata *Rob.*
Lophoderus quadrifasciana *Fern.*
" triferna *Walk.*
" velutinana *Walk.*
Tortrix pallorana *Rob.*, com.
" albicomana *Clem.*, com.
" peritana *Clem.*, com.
Amorbia humerosana *Clem.*
Ænectra inconditana *Wlsm.*, com.
Cenopis reticulatana *Clem.*
Dichelia sulfureana *Clem.*, com.
Amphisa discopunctana *Clem.*
Capua furcatana *Walk.*
Platynota flavedana *Clem.*
" sentana *Clem.*

Conchylidæ.

Conchylis straminoides *Grt.*
" argentilimitana *Rob.*

Grapholithidæ.

Bactra lanceolana *Hbn.*
Exartema permundana *Clem.*
" concinnana *Clem.*
" fasciatana *Clem.*, com.
Penthina hebesana *Walk.*
Sericoris coruscana *Clem.*, com.
" instrutana *Clem.*
" bipartitana *Clem.*
Pædisca circulana *Hbn.*
" robinsonana *Grt.*
" ridingsana *Rob.*
" cataclystiana *Walk.*
" abbreviatana *Wlsm.*
" constrictana *Zell.*
" abruptana *Zell.*
" strenuana *Walk.*, com.
" matutina *Grt.*
" desertana *Zell.*
" otiosana *Clem.*
" dorsisignatana *Clem.*
Semasia radiatana *Wlsm.*
" olivaceana *Riley.*
" ferruginana *Fern.*, com.
" striatana *Clem.*
" argutana *Clem.*
Proteopteryx spoliana *Clem.*, com.
Phoxopteris burgessiana *Zell.*
" angulifasciana *Zell.*
" comptana *Froel.*
" cornifoliana Riley.
Grapholitha caryana *Fitch.*
" interstinctana *Clem.*
Carpocapsa pomonella *Linn.*, com.

TINEINA.

Choreutidæ.

Brenthia pavonacella *Clem.*, com.

Anaphoridæ.

Acrolophus plumifrontellus *Clem.*, com.
Anaphora popeanella *Clem.*
" tenuis *Wlsm.*
Pseudanaphana arcanella *Clem.*, com.

Tineidæ.

Xylesthia clemensella *Cham.*, com.
Scardia cloacella *Haw.*
Tinea acapuspennella *Clem.*
" biselliella *Hum.*
" carnariella *Clem.*
" costosignella *Clem.*
" ferruginella *Hbn.*
" fuscipunctella *Haw.*
" pellionella *Linn.*
" rusticella *Hbn.*
Incurvaria mediostriatella *Clem.*
Hybroma servulella *Clem.*

Gelechiidæ.

Stenoma schlægeri *Zell.*
Cryptolechia quercicella *Clem.*
Machimia tentorierella *Clem.*
Amdrya effrenatella *Clem.*
Gelechia agrimoniella *Clem.*
" alacella *Clem.*
" cereallella *Oliv.*
" flavicostella *Clem.*
Gelechia gallæsterella *Kell.*
" hallipalpis *Walk.*
" mediofuscella *Clem.*
" vagella *Walk.*
Euclemensia bassettella *Clem.*
Ypsolophus contubernatellus *Fitch.*
Æcophora borkhausenii *Zell.*
Blastobasis chalcofrontella *Clem.*
" purpurocomella *Clem.*, com.
Strobisia emblemella *Clem.*
" iridipennella *Clem.*

Gracilariidæ.

Gracilaria robiniella *Cham.*

Coleophoridæ.

Coleophora corruscipennella *Clem.*

Lavernidæ.

Laverna eloisella *Clem.*

Elachistidæ.

Butalis basilaris *Zell.*
Cosmopteryx montisella *Cham.*

Lithocolletidæ.

Bedellia somnulatella *Zell.*
Lithocolletes basistrigella *Clem.*
" faginella *Zell.*
" guttifinitella *Clem.*
" hamadryella *Clem.*
Tischeria ænea *F. & B.*

Lyonetiidæ.

Phyllocnistis vitifoliella *Cham.*
" vitigenella " com.

NOTE.—Since the forepart of this list was published a large number of Micro-Lepidoptera have been identified by Mr. August Busck and Dr. Dyar of Wash., D. C., and I take this opportunity to thank these two gentlemen for their kindness.

So little is known of the majority of our Micro-Lepidoptera, that I have refrained from stating if a species was rare, only marking those species that I know are common. No doubt, the majority of the species are common at certain times and in certain places.

The Coleoptera of the Sacramento Mountains of New Mexico.

By W. Knaus, McPherson, Kansas.

The writer spent a week in June, 1902, in the Sacramento Mountains of southeast New Mexico, and collected Coleoptera from an elevation of forty-five hundred feet at Alamogordo, to nine thousand feet at Cloudcroft on the summit. Alamogordo, on the western foot hills of the mountains, is eighty-seven miles northeast of El Paso, Texas. Until 1902 these mountains could only be reached by rail over a branch road from El Paso. In the spring of 1902 the Rock Island El Paso line was opened for traffic and access to this range of mountains became easy.

My first day's collecting was up La Luz and Fresnal Canons; from La Luz, at an elevation of forty-seven hundred feet to Highrolls, at an elevation of six thousand five hundred; my last day was on the fourteenth of June at Cloudcroft on the summit. The intermediate days were spent in the upper canons that have their beginning in the vicinity of Cloudcroft, the elevations being from seven thousand to nine thousand feet.

The lower La Luz and Fresnal canons contain little or no timber; what little is seen is the cottonwood and the quaking asp. The vegetation is semi-desert in character, thick fleshy leaves covered everywhere with spines. As the elevation increases pines and spruces begin to appear, and the semi-desert flora begins to change. At Toboggan, at an elevation of eight thousand feet, the flora has entirely changed owing to an abundant precipitation of moisture. The mountain sides are covered with pine and spruce forests which increase in density as the summit is reached. The canon sides and summit are covered thickly in places with a growth of shrubs and scrubby oaks, known locally as "shin oaks," and afford excellent collecting grounds for the entomologist.

At the higher elevations many species of Coleoptera occur which are found in northern New Mexico and southern Colorado; while the lower elevations show species peculiar to the semi-desert or arid fauna.

As my collecting was done the second week in June, before the July rains, the collector who visits this region in August will find many forms that were absent at the time of my visit.

I collected from three to eight hours each day I was in the mountains, and took two hundred species and over fifteen hundred specimens. Mr. H. C. Fall, of Pasadena, California, kindly assisted in the determination of most of the material; Mr. P. Jerome Schmitt, of Beatty, Pennsylvania, determined the single species each of the Scydmænidæ and Pselaphidæ taken, and Mr. Charles W. Leng, of New York, identified the Coccinelids; to all of whom, and to Mr. T. D. A. Cockerell, of East Las Vegas, N. M., who has added notes and ascertained the number of species new to New Mexico, many thanks are due.

Identifications are sufficiently complete to show that this part of the territory has been collected over but little, for of the two hundred species taken nearly fifty species, or one-fourth, are new or undescribed; a half dozen or more species belonging to new genera. Fifty-seven species are new to New Mexico, eighteen genera are also new to the territory. Forty-six species are new to southern New Mexico. The only Scydmænid ever identified by name from the territory, *Scydmænus californicus* Mots., a Pacific coast Alaskan species, I took at Cloudcroft. In the same upper canon I found three specimens, in ants' nests, of *Articerus fuchsii* Brend., a quite rare myrmecophilus Pselaphid previously recorded from near Las Vegas.

1, 33*a* *Cicindela oregona* Lec. Seven thousand feet. Wootens.
2, 179 *Notiophilus hardyi* Putz. Two specimens, James Canon; first record for southern N. M., 8,500 feet.
3, 215 *Pasimachus duplicatus* Lec. Cloudcroft; new to N. M.
4, 215*a* " *ensifer* Lec. Cloudcroft.
5, 219 " *californicus* Chd. Cloudcroft, 9000 feet. Several each of the above *Pasimachus* were taken.
6, 232 *Dyschirius globulosus* Say. James Canon; a dozen specimens.
7, 345 *Bembidium lugubre* Lec. Common.
8, 347 " *striola* Lec. Two specimens; new to southern N. M.
9, 351 " *lucidum* Lec. Several specimens; common in N. M.
10, 391 " *versicolor* Lec. One specimen; taken by Wickham at Albuquerque also.
11, 408 *Bembidium dubitans* Lec. Sixteen specimens, James Canon; new to southern N. M.

12, 438 *Tachys pumilus* Dej. One specimen ; new to N. M.

13, 472 *Patrobus longicornis* Say. One specimen ; genus and species new to N. M.

14, 524 *Pterostichus substriatus* Lec.

15, 583 " *luczotii* Dej. Both species common in N. M.

16, 618 *Evarthrus torvus* Lec. Several specimens ; new to southern N. M.

17, 629 *Amara laticollis* Lec. Common ; new to N. M.

18, " New species.

19, 9270 " *nupera* Horn. Common at Wootens, seven thousand feet ; new to southern N. M.

20, 670 *Amara interstitialis* Dej. Common ; new to southern N. M.

21, 713 *Dicælus lævipennnis* Lec. Three specimens near Cloudcroft, also taken at Eagle Creek by Townsend.

22, 722 *Dicælus sculpitilis* Say. Three specimens ; new to southern N. M.

23, 751 *Calathus dubius* Lec. One specimen.

24, 815 *Platynus placidus* Say. Four specimens.

25, 855 *Zuphium americanum* Dej. One specimen, Alamogordo; genus and species new to N. M.

26, 1080 *Harpalus retracus* Lec. One specimen.

27, 1081 " *amputatus* Say. Several specimens ; not found before so far south.

28, 1112 *Harpalus clandestinus* Lec. Several specimens ; one recorded at Las Vegas.

29, *Stenolophus*. Species probably undescribed ; common.

30, 1155 *Bradycellus cognatus* Gyll. Two specimens ; new to N. M.

31, 1188 *Anisodactylus harrisii* Lec. Two specimens ; new to southern N. M.

32, 1406 *Agabus cordatus* Lec. Several specimens ; Fresnal Creek.

33, 1413 " *lugens* Lec. Same as above ; new to southern N. M.

34, 1706 *Silpha lapponica* Hbst. One specimen ; new to southern N. M.

35, 1798 *Agathidium revolvens* Lec. One specimen ; genus and species new to N. M.

36, 1849 *Scydmænus californicus* Mots. One specimen (genus and species new to N. M.); under bark of quaking asp, Cloudcroft.

37, 1864 *Articerus fuchsii* Bren. Three specimens, with ants, Cloudcroft ; new to southern N. M.

38, *Falagria* species. Several specimens with ants under ash bark.

39, 2055 *Aleochara bimaculata* Grav. Two specimens.

40, *Aleocharina* ; genus and species dubious. One specimen.

41, " " " Two specimens.

42, 2105 *Quedius limbifer* Horn. One specimen ; new to N. M.

43, 2106 " *lævigatus* Gyll. One specimen ; new to N. M.

44, *Quedius ænescens* Makl. One specimen ; new to N. M.
45, *Philonthus.* New species. Four specimens.
46, 2150 " *furvus* Nord. James Canon, common ; new to southern N. M.
47, 2268 *Xantholinus cephalus* Say. Two specimens ; new to N. M.
48, *Tachinus.* New species, near *crotchii.* One specimen.
49, 9712 *Oxytellus invenustus* Casey. Eight specimens, James Canon ; new to N. M.
50, 2840 *Homalium lapponica* Zett. One specimen ; new to N. M.
51, 9832 *Antobium tibiale* Casey. One specimen ; new to N. M.
52, 3046 *Hippodamia convergans* Guer. Wootens ; common.
53, 3049 " *sinuata* Muls. Wootens ; common.
54, *Coccinella plagiata* Casey. One specimen, Cloudcroft ; new to N. M.
55, 3065*a* *Coccinella abdominalis* Say. One specimen, Cloudcroft.
56, 3078 *Psyllobora 20-maculata* Say. Two specimens, Fresnal Creek.
57, *Exochomus hogei* Gorh. One specimen at Wootens ; common at El Paso, Tex.
58, 3183 *Aphorista morosa* Lec. New to southern N. M. Several specimens at Toboggan.
59, 3455 *Orphilus glabratus* Fab. One specimen ; new to southern N. M.
60, 3494 *Hister depurator* Say. Common ; new to southern N. M.
61, 3609 *Saprinus plenus* Lec. Several specimens.
62, 3633 *Plegederus transversus* Say. Also taken at Albuquerque.
63, 3634 " *sayii* Mars. One specimen ; new to southern N. M.
64, 3635 " *consors* Horn. One specimen ; new to N. M
65, 3666 *Cercus sericans* Lec. Common ; genus and sp. new to N. M.
66, 3673 *Carpophilus pallipennis* Say. Several specimens ; common in N. M.
67, 3684 *Carpophilus zuni* Casey. One specimen ; new to N. M.
68, 3689*b* *Colastus limbatus* Lec. Common under fresh cut bark ; genus and sp. new to N. M.
69, 3704 *Epuræa immunda* Sturm. Under freshly cut bark ; new to N. M.
70, 3704 " var. *flavomaclata* Mackl. Under bark with preceding sp.; new to N. M.
71, *Tenebroides ;* species. One specimen.
72, 3923 *Dryops striatus* Lec. Fresnal and La Luz creeks.
73, 4210 *Elater cordatus* Lec. One specimen ; new to N. M.
74, 4233 " *mœrens* Lec. One specimen ; new to N. M.
75, 4245 " *apicatus* Say. One specimen ; new to N. M.
76, 4320 *Melanactes castanipes* Payk. Two specimens ; new to N. M.
77, *Athous*, sp. not described. One specimen.
78, 4628 *Anthaxia æneogaster* Lap. Two specimens.
79, 4634 *Anthaxia flavimana* Gory. One specimen ; new to southern N. M.

80, 4639 *Chrysobothris femorata* Fab. Two specimens; new to southern N. M.
81, 4746 *Agrilus egenus* Gory. Six specimens ; new to southern N. M.
82, 4761 *Brachys ærosa* Melsh. Two specimens ; new to southern N. M.
83, 4767 *Rhyncheros sanguinipennis* Say. Two specimens; new to southern N. M.
84, 4771 *Lycostoma fulvellus* Lec. One specimen ; genus and sp. new to southern N. M.
85, 4823 *Pyractomena angulata* Say. One specimen; genus and sp. new to N. M.
86, *Podabrus*, near *comes* and *mexicanus* Gorh. One specimen.
87, *Telephorus*, new sp. ; two specimens.
88, *Telephorini ;* genus and sp. dubious. One specimen.
89, *Polemius*, new sp. Two specimens.
90, *Pseudobæus* sp. One specimen.
91, *Attalus* sp. Several specimens.
92, *Trichochrus* sp. One specimen.
93, *Mecomycter fasciatus* Casey. One specimen ; genus and sp. new to N. M.
94, 5164 *Clerus spinolæ* Lec. One specimen on yucca ; Desert, N. M.
95, 5177 " *nigriventris* Lec. One specimen.
96, *Hydnocera ;* species. One specimen.
97, *Hadrobregnus* sp. One specimen.
98, 5457 *Onthophagus coproides* Horn. One sp., dead ; James Canon.
99, 5521 *Aphodius crassulus* Horn. New to southern N. M.
100, 5529 " *vittata* Say. Three specimens.
101, 5539 " *anthracinus* Lec. Common ; new to southern N. M.
102, 5692 *Macrodactylus uniformis* Horn. One specimen.
103, 5877 *Aphonus clunalis* Lec. Two specimens ; new to southern N. M.
104, 5967 *Tragosoma harrisii* Lec. One specimen under pine bark.
105, 5971 *Asemum mæstum* Hald. One specimen ; genus and sp. new to N. M.
106, 5973 *Nothorina aspera* Lec. One specimen ; genus and sp. new to N. M.
107, 6244 *Toxotus vestitus* Hald. One specimen ; genus and sp. new to N. M.
108, *Acmæops* sp. One specimen.
109, 6301 *Leptura propinqua* Bland. Three specimens ; new to southern N. M.
110, 6453 *Pogonocherus mixtus* Hald. Six specimens on ash bark.
111, 6550 *Orsodachna atra* and var. Ahr. Common.
112, 6581 *Anomæa militaris* Lec. Three specimens ; genus and sp. new to N. M.
113, 6582 *Euryscopa lecontei* Cr. One specimen.
114, *Coscinoptera* new sp. One specimen.

115, 6601 *Chlamys plicata* Fab. One specimen. Also Mesilla valley.
116, 6614 *Cryptocephalus 4-maculatus* Say. One specimen.
117, 6617*a* " *4-guttatus* Suffr. Two specimens; new to southern N. M.
118, *Pachybrachys.* Two specimens.
119, " new sp. Several specimens.
120, " new sp. One specimen.
121, 6711 *Diachus æruginosus* Lec. Two specimens; new to N. M.
122, 6722 *Xanthonia stevensii* Balv. Common; new to N. M.
123, 6767 *Graphops pubescens* Melsh. One specimen; new to N. M.
124, 6819 *Chrysomela flavomarginata* Say. Several specimens, James Canon; new to N. M
125, 6821 *Chrysomela auripennis* Say. One specimen; new to southern N. M.
126, 6889 *Diabrotica lemniscata* Lec. Two specimens; new to southern N. M.
127, 6933 *Œdionychis lugens* Lec. Common in James Canon; new to southern N. M.
128, 10419 *Disonycha politula* Horn. James Canon.
129, " near *mellicollis.* One specimen.
130, 6980 *Crepidodera helxines* Linne. One specimen; new to southern N. M.
131, 10440 *Longitarsus bicolor* Horn. Common.
132, 7058 *Psylliodes punctulata* Melsh. One specimen; genus and sp. new to N. M.
133, 7217 *Zopherus concolor* Lec. Four specimens.
134, 7316 *Eleodes obscura* Say. One specimen; Ancho, N. M.
135, 7319 " *pedinoides* Lec. Two specimens; James Canon.
136, 7327 " *extricata* form *cognata* Hald. Common; *cognata* form new to N. M.
137, *Eleodes*, species dubious; three specimens.
138, " " common.
139, 7350 " *lecontei* Horn. One specimen; new to N. M.
140, 7394 *Iphthimus serratus* Mann. One specimen; new to southern N. M.
141, *Temnochila*, new sp. One specimen.
142, 7417 *Tenebrio molitor* Linn. One specimen; Alamogordo.
143, *Blapstinus*, sp. dubious; common below Cloudcroft.
144, 7532 *Hypophlœus parallelus* Melsh. One specimen; genus and sp. new to N. M.
145, 7661 *Carebara longula* Lec. Two specimens, under pine bark; new to southern N. M.
146, 7719 *Salpingus tibialis* Lec. One specimen; new to N. M.
147, 7766 *Anaspis atra* Lec. Common.
148, 7770 *Anaspis rufa* Say. Not so common; new to southern N. M.
149, 7780 *Mordella scutellaris* Fab. One sp.; new to southern N. M.

150, 7895 *Corphyra lewisii* Horn. Five sp. ; new to N. M.

151, 7922 *Notoxus calcaratus* Horn. Common along Fresnal Creek.

152, *Lappus cursor* Casey. Two spec. ; Fresnal Creek. New to N. M.

153, *Anthicus* near *parallelus*. One specimen.

154, 8037 *Nemognatha immaculata* Say. Two specimens.

155, *Epicauta*. New species ; two specimens ; James Canon.

156, " " " " at Wootens.

157, 8072 *Tetraonyx fulva* Lec. Two specimens.

158, 8207 *Eucnamptus collaris* Fab. Several specimens. Genus and species new to N. M.

159, *Rhynchites*. New species ; near *æratus*. One specimen.

160, 8216 *Deporans glastinus* Lec. Several specimens, beating scrub oak ; genus and species new to N. M.

161, 8228 *Attelabus rhois* Boh. Two specimens ; new to N. M.

162, New species, probably a new genus near *Anametis ;* several specimens.

163, 8262 *Crimodema protracta* Horn. Four specimens, beaten from oaks. Genus and species new to N. M.

164, 8266 *Peritaxia rugicollis* Horn. Several specimens ; new to southern N. M.

165, 8294 *Thricolepis inornata* var. Horn. Two specimens ; new to southern N. M.

166, *Thricolepis*, new species. One specimen.

167, New specimen, new genus, near *Pandeletejus*. Several specimens by beating scrub oaks.

168, *Pandeletejus*, new species. Several specimens.

169, *N. Sp.* Genus dub., near *Cyphormimus*. Several specimens.

170, 8408 *Apion proclive* Lec. One specimen, new to N. M.

171, *Dorytomus*, sp. dub. One specimen.

172, *Smycronyx*, sp. dub. One specimen.

173, 8563 *Phyllotrox nubifer* Lec., common. Genus and species new to N. M.

174, 8613 *Magdalis lecontei* Horn. One specimen ; new to southern N. M.

175, *Magdalis*, new species. One specimen.

176, 8641 *Anthonomus sycophanta* Walsh. One specimen ; new to N. M.

177, 11055 *Tychius subfasciatus* Casey. One specimen ; new to N. M.

178, 8711 *Læmosaccus plagiatus* Fab. Common : on shin oaks ; new southern N. M.

179, 8808 *Piazurus californicus* Lec. One specimen ; genus and species new to N. M.

180, 8845 *Ceutorhynchus pusio* Mann. One specimen ; new to N. M.

181, " *æratus* Dietz. One specimen ; new to N. M.

182, 11022 *Baris aprica* var. Casey. One specimen ; new to N. M.

183, 8883 *Trichobaris texana* Lec. One specimen ; common in Mesilla Valley.

184, 11180 *Calandrinus obsoletus* Casey. One specimen, Ancho, N. M. New to N. M.

185, *Balaninus* sp. One specimen.

186, 9059 *Pityophthorus retusus* Lec. Ten specimens ; new to southern N. M.

188, 9093 *Xyloterus bivittatus* Kirby. Three specimens ; new to southern N. M.

188, 9025 *Tomicus plastographus* Lec. Two specimens under pine bark ; new to southern N. M.

189, 9149 *Scolytus praeceps* Lec. Three specimens ; new to N. M.

190, " species probably new. One specimen.

191, *Chramesus*, new species. Two specimens.

192, *Hylesinus*, species probably new.

193, 9179 *Dendoctronus terebrans* Oliv. One specimen.

194, 9180 " *similis* Lec. Three specimens.

195, *Hylastes*, new species. One specimen.

196, 9201 *Hylurgops subcostulatus* Mann. Three specimens ; new to N. M.

197, 9207 *Allandrus bifasciatus* Lec. Three specimens ; new to southern N. M.

Also several specimens not sufficiently studied to allow of recognition.

Before stopping in the Sacramento Mountains, I spent three days at El Paso, Texas, and devoted a few hours each day to collecting in the Rio Grande valley above and below El Paso, and in the foot hills just north of the city. Owing to the prolonged drouth, vegetation was badly parched, and insect life was reduced to the minimum. Only about twenty-five species were taken as the following list shows :

1, 39 *Cicindela tenuisignata* Lec. A specimen on saline bar near Rio Grande river, north of El Paso.

2, 51 *Cicindela sperata* Lec. Three specimens as above ; fairly common.

3, 367 *Bembidium nubiculosum* Chd. One specimen in the Rio Grande valley.

2, 2251 *Actobius paederoides* Lec. Two specimens.

5, *Exochomus hogei* Gorh. Common on flowering shrubs in foothills north of El Paso.

6, 3101 *Hyperaspis fimbriolata* Melsh. Several specimens beaten from flowering shrubs north of El Paso.

7, *Hyperaspis* var. *pluralis* Casey. Same as species.

8, 3102 " *lateralis* Muls. Two specimens, foothills north of El Paso.

9, 3750 *Cybocephalus nigritulis* Lec. One specimen.
10, 6141 *Batyle suturale* Say. Common in Rio Grande valley.
11, 6584 *Coscinoptera æneipennis* Lec. One specimen by beating.
12, 6587 " *axillaris* Lec. Several specimens by beating.
13, *Chlamys memnonius* Lec. One specimen by beating.
14, 6622 *Crytocephalus leucomelas* Suffr. Two specimens, beating willows along Rio Grande River.
15, *Pachybrachys* sp. One specimen Rio Grande valley.
16, 6738 *Myochrous denticollis* Say. One specimen Rio Grande valley.
17, 10416 *Disonycha crenicollis* Say. Common, Rio Grande valley.
18, *Bruchus* sp. One specimen.
19, 10500 *Emmenastes nitidus* Casey. Rio Grande valley.
20, 7307 *Eusattus reticulatus* Say. Two specimens.
21, 7599 *Hymenorus punctatissimus* Lec. One specimen.
22, 7644 *Hyporhagus opuntiæ* Horn. One specimen by beating; Rio Grande valley.
23, 10785 *Elissa laticeps* Casey. Beaten from low flowering shrub north of El Paso.
24, *Apion*, new species. Beaten from flowering shrub same as above. Common.
25, 11052 *Tychius simplex* Casey, common. Beaten from flowering shrubs with new species of *Apion*.

◆

Culex atropalpus Coquillett.

By Harrison G. Dyar.

This rather pretty little mosquito is found in the vicinity of swift streams. The larvæ are found only in the water-filled pot holes that occur in the rocks along such places. I have recorded the species from New Hampshire and on the Potomac River in Maryland. In the latter place it was abundant, both as larvæ and adult. The adults were very troublesome on and about the river, biting freely. The eggs are laid in patches on the rock sides of the pot hole, just at the surface of the water, usually at a time when the water is low. The winter is passed in this state. Doubtless some of the eggs must be destroyed during the winter and spring when the pot holes are filled by the swollen stream and disturbed by ice and stones carried by the current. Those that remain hatch early, but in an irregular manner. Eggs obtained in October began to hatch in March and continued to hatch irregularly for some weeks, so that larvæ of all sizes occurred in the jar. The growth is slow and it seems doubtful if the March larvæ will give adults before May. The larvæ are rather deliberate in their motions and habitually remain long below the water. They can be seen browsing along the sides of the jar well below the surface, feeding on the green Protococcus that grows there. Occasionally they rise and push the breathing tube through the surface film for a few seconds, but they do not remain hanging there but shortly descend to resume browsing. The anal processes are long and well supplied with tracheæ, which permits the larvæ to remain long under water. It would seem as if there should be more than one brood in a year, but I am not certain that this is the case. Larvæ are found late in Fall and probably many remain in the pot holes after the water freezes; but such must perish, as they could never withstand the rush of the spring floods even if they survived the winter in the ice. The adults do not seem to live long. Those bred in October lived but a few weeks and I doubt whether they normally hibernate.

I have described the eggs and mature larvæ (Jour. N.Y. Ent. Soc., x, 195, 1902). In the first stage the head is round, flattened, evenly rounded, narrowed before the antennæ, blackish infuscated, eyes elliptical, black, antennæ moderate, uniform, infuscated, a single hair a little before the middle, terminal hair and spines normal; labial plate small with pronounced central tooth, side teeth minute; brushes normal. Thorax enlarged, flattened; body submoniliform, tapering posteriorly-normal; thoracic hairs longer than the width of thorax, delicate, moderate; abdominal hairs distinct on five segments but weaker and fewer posteriorly, twice as long as the width of a segment, very weak on the sixth segment, invisible on the seventh and eighth. Lateral comb of the eighth segment a single row of stout spines. Tube colorless, with a small terminal, infuscated ring. Anal segment dorsally plated, plate infuscated, a stout dorsal tuft, no ventral brush. Anal processes four, about as long as the segment, conical, with numerous tracheæ.

In the second stage the head is darkly blackish, the body pale. Hairs stronger, diminishing posteriorly. Air tube short, about twice as long as wide, slightly constricted conical, infuscated, with a double pecten behind that runs nearly to the tip. Anal segment with a small dark dorsal plate, ventral brush present, small, with a few small hairs before the barred area. Comb of the eighth segment a single row of stout, short spines. Antennal tuft at middle of joint, the antennæ all blackish.

In the third stage the head is rounded, blackish brown; antennæ uniform, blackish with very slight tuft at the middle of the joint; mouth brush moderate brown. Body normal, hairs moderate, distinct on the first five abdominal segments, diminishing to very fine short hairs posteriorly. Tube not quite twice as long as wide, constricted conical, stout, darkly infuscated, the pecten reaching three-fourths to the tip and exceeding the single tuft which is at about the middle of the tube. Anal segment with small dorsal plate, brush and tuft normal, small, the brush with a few slight hairs preceding the barred area. Comb of eighth segment a patch of spines about three rows deep.

Provespa a New Genus in the Vespidae.

BY WILLIAM H. ASHMEAD.

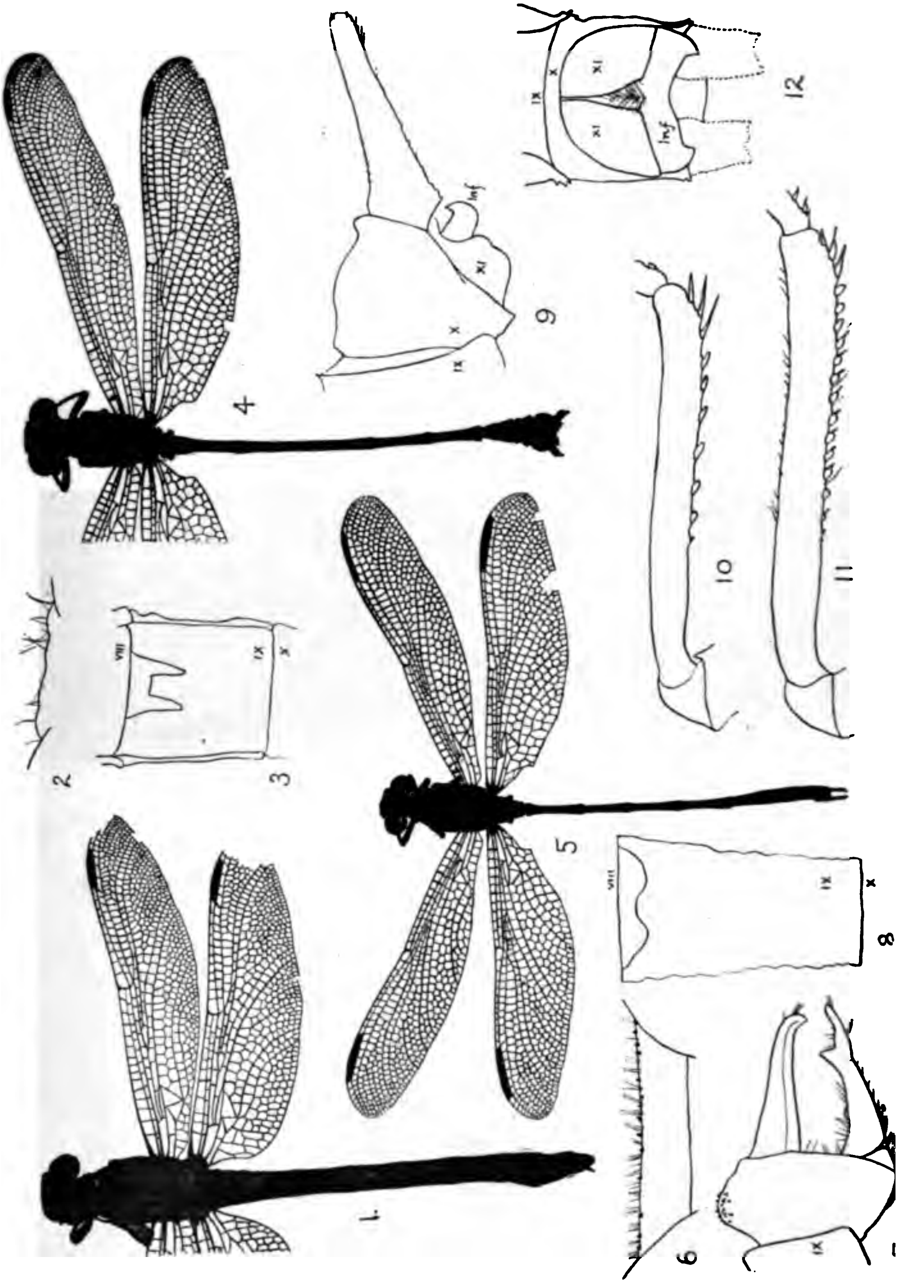
In arranging the *Vespidæ* in the National Collection I find quite a large series of *Vespa dorylloides* Saussure, collected by W. L. Abbott, in Trong, Lower Siam, which I find cannot be placed in *Vespa* Linné as now restricted, and for which I propose to erect a new genus *Provespa*, easily separated from *Vespa* L. by the aid of the following table:

Third cubital cell along the radius fully as long as the cubitus or a little longer.

Ocelli large, rather close together, the lateral almost touching the eye margin, not their width from it; abdomen rounded at base, not truncate . . . . **Provespa,** gen. nov.
(Type.—*Vespa dorylloides* Saussure.)

Ocelli small, the laterals far from the eye margin, at least thrice their width from it; abdomen truncate at base . . . . **Vespa** Linné.
(Type.—*V. vulgaris* L.)

LEPIDOTRAMA, n. n. for *Trama*, Harvey, Bull, Buff. Soc., 1875, p. 13, (not *Trama* Heyd., Stett. Ent. Zeit., 1857).—T. D. A. COCKERELL.



GOMPHUS OLIVACEUS, 1, 6, 8. EPIGOMPHUS LLAMA, 2, 3, 7. E. TUMEFACTUS, 4.
E. SUBOBTUSUS, 10, 11. DIAPHLEBIA NEXANS, 5, 9, 12.

On Some American Gomphinae (Odonata.)

By Philip P. Calvert, Ph. D.

University of Pennsylvania, Philadelphia.

(With Plate VIII.)

The following paper has grown out of some preliminary studies on the Gomphinæ for the Biologia Centrali-Americana edited by Mr. F. D. Godman, F.R.S., of London.

1. On DIAPHLEBIA.

In 1858, de Selys* compared *Epigomphus paludosus*, of his legion Gomphus, with *Diaphlebia angustipennis*, of his legion Gomphoides, as to their similarity in the "front très-déprimé, ... la coloration du corps . . . . le forme du bout des ailes," but adds, "les triangles libres et leur proportion empechent de passer plus loin la comparison." The discovery of a second species of *Diaphlebia*, *D. semilibera*, in which all the triangles are free except the discoidal triangle of the hind wings. again led him to a comparison with *Epigomphus*, and to point out the possibility of confusing them "si, par exception tous les triangles [of *Diaphlebia*] se trouvaient libres."† He considered that the greater length of the triangle of the hind wings and, in the males, the shape of the superior appendages and anal angle of the hind wings of *Diaphlebia* suffice to avoid such confusion.

He does not mention, however, that the same interesting possible "exception" in this genus would also constitute an exception to the primary character of the legion Gomphoides. The possibility is almost realized in *one* of two males described below as *Diaphlebia nexans* n. sp., in which all the triangles are free except the discoidal of the right hind wing (See Plate VIII, fig. 5). The significance of such conditions as exist in *D. semilibera* and *D. nexans* may perhaps be that they indicatea genealogical transition from the legion Gomphoides to the legion Gomphus via *Diaphlebia* and *Epigomphus*. This suggestion must not be interpreted as implying that the former was, or is, the ancestor of the latter, but merely that these two may be survivals of a group of genera which made such a transition.

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* Monographie des Gomphines, p. 87.

† Bulletin, Acad. Belg. (2) xxxiii, p. 198, 1869.

Diaphlebia and Epigomphus agree in the possession of the following generic characters: All wings: two rows of posttriangular cells out to at least the level of separation of subnodal and principal sectors, no supra-triangular cross-veins. *Front wings:* short sector and the first sector of the triangle diverging, only one row of postcostal cells to beyond the level of the triangle, not more than two rows between the second sector of the triangle and the hind margin of the wing.* *Hind wings:* no anal loop. *Males* without a median inferior distal carina on the tibiæ.

The generic characters of Diaphlebia which are different from those of Epigomphus are: All wings: no basal subcostal cross-vein, arculus usually at second antecubital, its sectors separated throughout by an interval considerably greater than the thickness of either sector, one submedian cross-vein (*sensu Selysii*, 1896), proximal end-vein of pterostigma prolonged to the principal sector but no thicker than the other cross-veins between the median vein and the principal sector, first and fifth or sixth antecubitals thicker than the others. *Front wings:* proximal angle of discoidal triangle as far distally from the arculus as the length of the proximal side of the internal triangle, 9–10 marginal cells between the short sector and the first sector of the triangle. *Hind wings:* not more than two rows of cells between the second sector of the triangle and the hind margin, anal triangle in the males three-celled, not reaching to the anal angle. *Head* (viewed from in front): inferior angle of the triangle formed by the ocelli about 120°; *Abdomen* ♂: eighth segment widest of all the apical half. *Tibiæ:* no differentiation in the spines.

Diaphlebia nexans n. sp. (Pl. viii, figs. 5, 9, 12).

♂. Lips and face pale green marked with dark brown as follows: a narrow border and a large median spot on the labrum, a spot on each side of the frons anteriorly and of the nasus (or the greater part of these last two areas). Ocellar and antennal region brown, vertex and occiput green, the last brown on each side, its hind margin slightly concave. Rear of the head pale green.

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* 7.7 per cent. of the 52 wings of *Epigomphus* examined had three rows for a distance of 2, 3 or 4 cells.

Prothorax pale green or yellow, median lobe with a large brown spot each side of the dorsum.

Thoracic dorsum brown, anterior margin, median carina, and two antehumeral stripes each side, green; the last consist of an inner (more mesial) stripe, not reaching the anterior border, slightly divergent downward from its fellow of the opposite side, and an outer (more lateral), narrower stripe placed very little in front of the humeral suture, interrupted near its upper end to form an inverted !, or not interrupted and confluent with inner antehumeral stripe, its lower end confluent with the yellow mesinfraepisternum. Mesepimeron and metapleuron pale green, an irregular narrow brown stripe on the (obsolete) 1st and on the 2nd lateral sutures. Thoracic sterna very pale green.

Abdomen pale green or yellowish green, marked with dark brown as follows: a pair of basal dorsal spots on 1, a stripe on each side of dorsum of 2 (above the auricles which are green and have a few very minute black denticles), leaving between them a mid-dorsal trilobed stripe; a median spot on the second fifth (very indistinct in one ♂) and a pair of small anteapical spots on the dorsum of 3-6, each of the paired spots being confluent with a lateral band, which may occupy the apical half of the sides of the segments, but is not visible in dorsal view; a transverse band on 7-9 occupying the third quarter of the segments on the mid-dorsal line, but of greater extent as they pass down on the sides of the segments, especially on 9 where they attain almost the entire segmental length. 10 brown, with a median dorsal green spot.

Superior appendages twice as long as 10, pale green, almost straight, slightly tapering toward the apex, which is obtuse and slightly curved inward; in profile view the inferior margin shows an obtuse angle immediately after the base, from the distal side of which angle proceeds an inferior, minutely spinulose carina.

Inferior appendage very short, in profile view seen to begin anterior to the base of the superiors, its upcurved and acute apex not quite reaching to the inferior basal angulation thereof; viewed from below, the appendage is quite broad, with a wide but shallow apical emargination, the two tips thus formed each ending in an upwardly-directed denticle giving the appearance seen in profile.

Legs pale greenish yellow, tibiæ, tarsi and anterior surfaces of the first and second femora brownish.

Wings faintly brownish, reticulation brown, costæ yellow anteriorly. Pterostigma ochre, surmounting 5-6 cells. All inner triangles free. Discoidal triangles of front wings with the anterior side equal to or slightly shorter than the proximal side, free in both front wings of one male, free (right), crossed from proximal to distal side (left) in the second male. Discoidal triangles of hind wings free (left) or crossed from anterior to distal side (right) in one male, crossed on both sides in second male. In the first mentioned male therefore only one of all the triangles is crossed, namely on the right hind wing. Front wings with 13-14 antecubitals, 11 postcubitals; hind wings with 9-11 antecubitals, 11-12 postcubitals.

♀ unknown.

Dimensions.—Abdomen 35, hind wings 29, pterostigma of front wings 4.5, of hind wings 5, superior appendages 2 mm.

Hab.—Chapada, Brazil, two males, probably by H. H. Smith, one labelled December (sup. apps. lost), in the Museum of Comparative Zoology, Cambridge, Mass.

Differs from the described species *D. angustipennis* Selys and *D. semilibera* Selys by the greater extent of pale coloring on the abdomen and fewer postcubitals on the front wings; from *semilibera* also by its smaller size and apparently the shape of the superior appendages.

II. On **EPIGOMPHUS.**

Epigomphus differs from *Diaphlebia* in the following respects:

All wings: one basal subcostal cross-vein (*98.1**), arculus distal to the second antecubital at least of the subcostal series (*98.1*), its sectors for a short distance beyond their origin separated by an interval less than the thickness of either sector (*100*), more than one submedian cross-vein (*sensu Selysii* 1896) (*96.2*), proximal end-vein of pterostigma not prolonged to the principal sector † (*100*). *Front wings*: first and sixth, seventh or eighth antecubital thicker (*92.3*), proximal angle of the discoidal triangle farther distally from the arculus than the length of the proximal side of the internal triangle (*80.8*), 12–16 mar-

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* The figures in parentheses indicate the percentage of 26 individuals examined in which the character existed as stated immediately preceding each parenthesis. Thus, of the 104 wings of the 26 individuals, one wing had no basal subcostal cross-vein, one wing had two such veins, leaving 102 wings or 98.1 % as stated above.

† Occasionally a cross-vein does occur immediately below the proximal posterior angle of the pterostigma, but even in such cases it is not in prolongation of the proximal end-vein, nor is it thicker than its fellows.

ginal cells between the short sector and the first sector of the triangle (*92.3*). *Hind wings:* first and sixth or seventh antecubitals thicker (*94.2*), at most four, often only three, rows of cells between the second sector of the triangle and the hind margin (*96.2*), no anal triangle (*100*). *Head* (viewed from in front): inferior angle of the triangle formed by the three ocelli about 90° (*100*). *Abdomen* ♂: 10th segment widest, or 8–10 of equal width in *E. llama* n. sp. *Tibiæ:* antero-inferior row of spines on the third tibiæ of the males much shorter than those of the postero-inferior row and blunt at the tip. Auricles on the second abdominal segment well developed in both sexes.

The differentiation in certain tibial spines, above stated, constitutes a secondary sexual character hitherto unnoticed. Stages in the differentiation are shown in Pl. viii, figs. 11 and 10.

SYNOPSIS OF SPECIES OF *Epigomphus*.

§ 1. One pale green antehumeral stripe and a more posterior superior pale green antehumeral spot, the latter representing the upper end of the second antehumeral stripe of §II.

Males.

10th abdom. seg. with a dorsal tubercle about one-third as high as the segment itself, spinulose at tip.

Dorsal tubercle of 10 somewhat elongated transversely and divided by a shallow median emargination into right and left halves. Superior appendages slightly longer than 10, outer and inner edges slightly convergent in dorsal view; in profile view the upper and lower edges diverging to two-thirds the length of the appendage at which point the lower edge slants obliquely upward to form the moderately acute apex. Inferior appendage one and one-half times as long as the superiors, widely bifid in its apical three-fourths, its branches more divaricate than the superiors, each branch with a superior tooth at three-fourths the length of the appendage (just beyond the level of the tips of the superiors), and terminating in a backwardly (caudad), inwardly (mesad) and downwardly (ventrad) truncated apex bearing a dense tuft of hairs . . . . **paludosus.**

Dorsal tubercle of 10 not elongated transversely, nor emarginate at tip. Superior appendages about twice as long as 10, gradually tapering to the obtuse apex which is curved downward and slightly outward. Inferior appendage as long as the superiors, widely bifid in its apical three-fourths, its branches not quite as divaricate as the superiors, slightly divergent in their basal half, slightly convergent in their apical half, the place of change of direction coinciding with the position of an acute superior tooth ; tip of each branch obtusely rounded, no apical tuft of hairs ; each branch has also a smaller basal superior tooth. **llama** n sp.

10th abd. seg. with no dorsal tubercle, a double median group of spinules taking its place.

Superior appendages somewhat longer than 10, each one in dorsal view having the inner edge concave, the outer convex and almost angulate at two-thirds' length whence the appendage is obliquely truncated backwardly and inwardly to form a rather acute apex ; in profile upper and lower edges divergent to the apex which is emarginated almost in a semi-circle, thus forming two rather acute tips, only the upper of which is clearly visible in dorsal view. Inferior appendage three fourths as long as the superiors, widely bifid in its apical half, branches less divaricate than the superiors, each branch with an acute, superior, basal tooth near the outer margin and a bifid apex (seen in dorsal view), the outer part of which is the stouter and is directed laterally outward, while the inner part is directed backward ; no apical tuft of hairs . . . . **quadracies** n. sp.

Superior appendages slightly longer than 10 (which is greatly swollen), similar in dorsal view to those of *quadracies ;* in profile view directed downward, apex obliquely truncated upwardly (dorsad) and backwardly (caudad), the truncated margin crenulate. Inferior appendage three-fourths as long as the superiors, widely bifid in its apical half, branches much less divaricate than the superiors, each branch with a simple obtuse apex and 4-5 superior denticles in a row parallel to its inner margin . . . . **tumefactus** n. sp.

Superior appendages hardly longer than 10 (which is swollen), subconical, thicker at the base on the inner side, divaricate as much as the width of the segment, apex obtuse, curved a little downward and inward and resting on the fork of the inferior. Inferior appendage longer than the superiors, divided as far as the base, its branches as divaricate as the superiors, curved upward, and in profile view forked at the tip, upper branchlet acute, the other with its tip enlarged in the form of a palette, emarginate in a semi-circle exteriorly, with a strong tuft of yellow hairs in the emargination. (From de Sely's description). **obtusus.**

Females.

Spines of the distal half of the antero-inferior row, third femora, 7–9 in number, not markedly longer than on the basal half of the same femora.

Femora pale brown or yellowish.

Appendages and rudimentary 11th abd. segment between them one-third as long as 10, pterostigma of front wings 3.25 mm. long, occiput very low, almost straight, a little swollen on each side posteriorly. (From de Sely's description.) . . . . **paludosus.**

Appendages and rudimentary 11th abd. seg. between them almost as long as 10, pterostigma of front wings 4-4.5 mm. long, occiput with a pair of low elevations in the median third and a slightly higher superior tubercle on each side . . **llama** n. sp.

Femora bordered with black, pterostigma of front wings 3.5 mm. long. (From de Sely's description) . . . . **obtusus.**

Spines of the distal half of the antero-inferior row, third femora, 5 in number, much longer than the spines on any other part of these, or of the first or second, femora and nearly as long as the tibial spines; femora pale yellow (individual teneral, abd. segs. 6–10 lost), pterostigma of front wings 4 mm. long, median dorsal third of occiput slightly elevated, no lateral superior tubercles. **quadracies** n. sp.

§ II. Two narrow pale green or yellow antehumeral stripes, the posterior one very close to the humeral suture.

Males.

10th abd. seg. convex and slightly swollen dorsally, no tubercle, but with a double median group of spinules representing it. Superior appendages slightly longer than 10, each one in dorsal view having the outer and inner edges almost parallel, apex obliquely truncated backwardly (caudad) and inwardly (mesad), both the outer and inner angles of the truncation slightly produced; in profile view curved downward, especially in the apical half, terminating in an obtuse apex. Inferior appendage as long as the superiors, widely bifid in its apical three-fourths, branches less divaricate than the superiors, with no superior teeth, with simple slightly upturned apices, no apical tuft. **subobtusus.**

Females.

Spines of the distal half of the antero inferior row, third femora, about 5 in number, much longer than the spines on any other part of these, or of the first or second, femora and nearly as long as the tibial spines; femora pale brown, pterostigma of front wings 3 mm. long, occiput with no median elevation, but with a well-marked superior tubercle each side . . . . **subobtusus.**

MEASUREMENTS, ETC.

	paludosus		*llama*		*quadracies*		*tumefactus*		*obtusus*		*subobtusus*	
	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀
Abdomen (mm.)...	36–	42–	35.5	40.5	39–		42		35–	43	37.5	
	40.5	44	–40	–42	40.5				37		–41.5	
Hind wing (mm.)..	30–	34–	31–	37	33.5	34	38		31–	35	33–	35
	32	37	35.5						33		36	
Pterostigma (mm.)												
front wings........	3	3.25	3–	4–	3.5	4	3.5		3 3	3.5	3.5	3.5
			3.5	4.5							–3.75	
hind wings........	3.5	4	3.5	4.5	4	4.5	3.75				4	4
	–4		–4				–4					
Superior appendages ♂ (mm.)...	1.5		2.5		2		2				2 5	
											–3	
Appendages ♀ (mm.)...............		.5		1								
Front wings antecubitals.......	14–	16–	17–	17–	18–	17–			18–		18–	17-
	16	17	18	19	19	18	20		19		20	18
postcubitals.......	11-12	10-12	11–	12–	14–	13–	16–		10–	14	13–	13
			14	14	15	15	18		13		14	
Hind wings antecubitals.......	10–		12–	13–	13–	12–	13–				13–	
	12	12	13	15	14	13	14				15	13
postcubitals.......	10–	10–	11–	11–	13–	12–	15				11–	11-12
	13	12	13	15	14	14					13	

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Epigomphus Selys, Bull. Acad. Belg., xxi (2), p. 59 (1854), (2). xxviii, p. 188 (1869), (2) xxxv, p. 754 (1873), (2) xlvi, p. 468 (1878); Mon. Gomph., p. 84 (1858). Kirby, Cat. Odon., p. 71 (1890).

1. **E. paludosus** Selys, *ll. cc.*, pp. 60 (1854), 756 (1873), 468 (1878), 85 (1858). Needham, Proc. U. S. Nat. Mus., xxvi, p. 715, f. 8 (venation), (1903).

Hab.—Brazil, Minas Geraes. I have studied 2 ♂, colls. Mus. Comp. Zool., Calvert.

2. **E. llama** n. sp. (pl. viii, figs. 2, 3, 7).

Hab.—Chulumani in Bolivia, December 1, 3, 4, 27, 31, 1898, Jan. 2, 3, 5, 1899. 9 ♂, 5 ♀, all by W. J. Gerhart, coll. Acad. Nat. Sci. Phila.

3. **E. quadracies** n. sp.

Hab.—San Isidro, Guatemala, 1 ♂ by Champion in coll. Godman; Chiriqui 1 ♂, 1 (broken) ♀ in coll. McLachlan.

4. **E. tumefactus** n. sp. (pl. viii, fig. 4).

Hab.—Cache in Costa Rica, 2 ♂ by H. Rogers in coll. Godman.

5. **E. obtusus** Selys, *ll.cc.* pp. 187 (1869), 757 (1873), 468 (1878).

Hab.—Santo Paulo and Peba, Upper Amazons; Bogota. I have not seen this species.

6. **E. subobtusus** Selys, *l.c.* p. 467 (1878). (Pl. viii, figs. 10, 11.)

Hab.—Mexico, Guatemala, Costa Rica. I have studied 4 ♂ 1 (broken) ♀ in colls. Godman, U. S. Nat. Mus.

III. On **Gomphus olivaceus** Selys.

Among the Gomphinæ loaned to me by Mr. McLachlan for study in preparing the Biol. Cent. Am., I find the type of this species. As *olivaceus* is apparently unknown to us in America I give some figures from the type (see Pl. viii, figs. 1, 6, 8) and the following statement of differences from *G. plagiatus* ♀ to which it was compared by Selys.

♀. Hind margin of occiput with about 13 black denticles at irregular intervals for its whole length (absent in *plagiatus*).

Pale green antehumeral stripes wider (*i e.* each is about as wide at its lower end as the distance from its inner edge to the mid-dorsal carina, while in *plagiatus* ♀ this stripe is hardly half as wide as the distance mentioned), the outer edge convex (concave or straight in *plagiatus*), confluent at lower (anterior) end with the green of the anterior mesothoracic border (sometimes not confluent in *plagiatus*); green humeral stripe represented by a narrow inferior streak and a superior round spot, hence interrupted (not interrupted in *plagiatus*); no distinct brown stripes on the lateral thoracic sutures as there are in *plagiatus*.

Yellow dorsal band on abdomen more abruptly broader at bases of 2-7, on 6 and 7 forming a transverse basal ring which is confluent with the yellow of the inferior lateral surfaces, dark colors of the same segments blacker than in *plagiatus*; dorsum of 8-10 chiefly black, with a basal dorsal yellow spot half as long as the segment on 8 and 10 and one-third as long as 9, sides of 8-10 yellow (8 10 reddish brown in *plagiatus*); tips of the two lobes of the vulvar lamina much less acute; pterostigma shorter, 4 mm. (4.5 mm. in *plagiatus*).

EXPLANATION OF PLATE VIII.

Fig. 1. *Gomphus olivaceus* Selys. Female type in coll. R. McLachlan. Apex of abdomen somewhat distorted. × 1.3.
Figs. 2, 3. *Epigomphus llama* n. sp. ♀. 2, hind margin of occiput × 12.; 3, vulvar lamina. × 9.
Fig. 4. *Epigomphus tumefactus* n. sp. ♂. × 1.08.
" 5. *Diaphlebia nexans* n. sp. ♂. × 1.38.
" 6. *Gomphus olivaceus* Selys. ♀ type, occiput. × 15.
" 7. *Epigomphus llama* n. sp. ♂. Profile, left side of apex of abd.
" 8. *Gomphus olivaceus* Selys. ♀ type, vulvar lamina. × 9
" 9. *Diaphlebia nexans* n. sp. ♂. Profile, left side of apex of abd. × 15.
" 10, 11. *Epigomphus suboblusus* Selys, ♂, two third tibiæ showing modified spines of antero-inferior row; 11 less modified, 10 more modified. × 11.
" 12. *Diaphlebia nexans* n. sp. ♂, ventral view, apex of abdomen; bases of the superior appendages dotted. × 15.

Figs. 1, 4 and 5 from photographs by Dr. Henry Skinner, the others from camera drawings by the author. Roman numerals indicate abdominal segments.

◆

Two New Parasitic Hymenoptera.

By William H. Ashmead.

Mr. Otto H. Swezey of the Ohio State University, Columbus, Ohio, has recently bred three interesting hymenopterous parasites from a homopterous insect *Ormenis septentrionalis*, two of which prove to be new and are described below at his request.

Family BETHYLIDÆ.

Dryinus ormenidis, new species.

Female.—Length 4 to 4.5 mm. Black; clypeus, first five joints of the antennæ and the last joint (sometimes the last two joints) pale ferruginous, the scape beneath pale, the intermediate joints black or blackish; palpi and tarsi pale or yellowish-white; mandibles, a spot at the sides of the pronotum posteriorly and the legs, except the middle and hind tibiæ, which are black or fuscous, rufous, the tarsi pale; front wings fuscous at base to the basal nervure except at the extreme base, and a broad fuscous band from the apical half of the stigma across the wing but ending before attaining the hind margin, otherwise hyaline, the veins brownish or fuscous, the base of the stigma whitish; abdomen shining black, the apical segments especially along the venter, more or less and the sides and apex of the pygidium testaceous.

Type.—Cat. 6766, U. S. N. M.

The species was first bred by Miss Mary Murtfeldt, at Kirkwood, Mo., from *Ormenis pruinosa* Say, and now by Mr. Otto H. Swezey, at Columbus, Ohio, from *O. septentrionalis*. He has also bred *Gonatopus* (Labeo) *typhlocybæ* Ashm. from the same host.

Family ENCYRTIDÆ.

Cheiloneurus swezeyi, new species.

Female —Length 1.5 mm. Brownish-yellow above, the scutellum bright rust red, with a tuft of black bristles at apex; eyes large, brown-black with a faint purplish tinge in certain lights; the temples, cheeks and the thorax beneath pallid or whitish, the mesosternum with a black streak; the abdomen, especially above, blackish or dark brown; antennæ broken; front wings hyaline towards base, fuscous on apical two-thirds and with a purplish iridescent spot at lower apical corner. The mesonotum is clothed with a fine, short, silvery pubescence.

Male.—Length 0 8 to 1 mm. Colored similar to the female, only the thorax is more whitish at sides and beneath, the tuft of hairs on scutellum sometimes absent, the head smaller, the legs yellowish, the trochanters and base of femora white, the middle femora and tibiæ, except a pale annulus at base, more of a brownish-yellow, the latter with a blackish pubescence outwardly; tarsi pale; wings clear hyaline.

Type.—Cat. No. 6767, U. S. N. M.

Described from 2 ♀ and 3 ♂ specimens in poor condition. Mr. Swezey reports this from *Dryinus ormenidis*, but *Cheiloneurus* is parasitic on Coccids and some mistake has been made. I see no reason why it might not be a primary parasite on *Ormenis*, which in the larval stage resembles a mealybug.

◆

The Psychophora Mix-up.—II.

By HARRISON G. DYAR.

I have previously referred to the identification of the genus *Psychophora* (ENT. NEWS, xiii, 191, 1902) as made by Dr. Skinner and differing from that generally accepted. References to the species *P. sabinii* Kirby are given in Dr. Skinner's article (ENT. NEWS, xiii, 141, 1903), and by Pagenstecher (Fauna Arctica, ii, 323, 1901). The old identification of the genus is typified in Guenée's *Larentia frigidaria*, which, according to Hulst, belongs of the Geometridæ, subfamily Hydriominæ. Hulst gives as a synonym of this species *phocata*

Moschler, which is kept separate by Pagenstecher, but in the same genus (*Cidaria*). Hulst writes (ENT. NEWS, vi, 70, 1895) "The type of *Psychophora sabinii* Curt. is in the [British] Museum. The middle band of the fore wings is quite distinct and it differs very much from the 'seal brown' immaculate form which Dr. Packard had from Polaris Bay [Described by Hulst as var. *polaris*, Bull. U. S. Nat. Mus., 52, 287, 1903]. Var. *frigidaria* Gn. ii, 269, is, I think, not different from the blackish form described by Dr. Skinner as *Glaucopteryx immaculata*. There are some specimens taken in Grinnell Land which closely approach the form which Dr. Packard had."

I wrote to Sir George Hampson to kindly examine Curtis' types, but he writes: "We have not got Curtis' type of *Psychophora sabinii*, but have specimens from Grinnell Land, Nova Zembla and Scandinavia; they are Geometridæ, Larentinæ of perfectly normal structure." Therefore, I have no evidence from the original types, as I hoped to have after reading Hulst's note. The specimens in the British Museum are evidently of the *frigidaria* form.

Hulst's definition of the genus *Psychophora* (Trans. Am. Ent. Soc., xxiii, 290, 1896) is: "Palpi porrect, rough-haired, moderate; tongue developed; clypeus very broad, flattish, rough-scaled; antennæ bipectinate in male, filiform, pubescent in female, thorax rough, hairy. Abdomen rough, hairy, untufted. Wing-vestiture hairy, fore wings 12 veins, two accessory cells,* 3 and 4 close at base, 10 and 11 from cell, 12 free; hind wings eight veined, 3 and 4 close together, 5 at middle of cell, 6 and 7 stemmed, 8 anastomosing with cell to beyond middle; hind legs with two pairs of spurs." To which is added, fore wing with vein 7 stemmed with 8, from the synopsis on page 255.

The second identification of *Psychophora* is typified by Skinner's *P. fasciata*. The generic characters, following Hulst's form are: Palpi porrect, very roughly haired, moderate; tongue developed; clypeus very broad, slightly bulging, hairy; antennæ shortly bipectinate, the pectinations decreasing on outer third, but showing as serrations close to apex, pubescent;

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* Should be *one* accessory cell as Hulst's synoptic table gives, and as specimens of *frigidaria* before me show.

thorax rough hairy; abdomen rough hairy, untufted, the ♂ genitalia very prominent. Wings with vestiture somewhat hairy; fore wings 12 veined, with fovea below above base of vein 1, one accessory cell, veins 3 and 4 rather remote at base, 5 from middle of discocellulars (in one specimen nearer to 4 than to 6, and about as near to it as 4 is to 3), 7 to 9 stalked from end of accessory cell, 10 from near end of accessory cell, 11 on cell, 12 free; hind wings 8-veined; 3 and 4 shortly stalked from end of cell, 5 weak at base as is the cross-vein of cell, outwardly stronger, though weaker than the other veins, arising from the middle of the discocellulars, 6 and 7 shortly stalked, 8 anastomosing with cell at basal fourth then free and divergent slightly to end of cell, then more rapidly divergent. Hind legs with two pairs of slender spurs, hairy. Apparently falls in the subfamily Ennominæ.* The moths are, however, stout, and with rather elongate trigonate wings, and do not look like most Geometridæ. But with the character shown it is not admissable to place them in any other family.

To which of these different types does *Psychophora* come nearest?

Kirby in his original description says: "Wings incumbent, antennæ of the male setaceous, bipectinate at base, with short rays . . . . tongue rather long, like that of a Noctua or Phalæna. Feelers recurved, very hairy, consisting of two joints. Antennæ setaceous, bipectinate for about half their length, with a single pair of short rays emerging from each of the branching joints, the other joints are hairy underneath. Wings imcumbent, rather longer than wide, fringed at the end. Tibiæ armed in the middle with a long spur. Abdomen thickish, tufted at the end. Anal forceps consisting of two horny concavo-convex reddish pieces, dilated at the top and rounded . . . . ." Curtis adds: "Antennæ rather short and setaceous, bipectinated in the male, simple in the female, the rays very short at the base and vanishing towards apex [the figure shows the pectinations distinct to outer two-thirds, then shortening but visible close to apex]; each joint producing two which are clavate and pubescent; maxillæ long and spiral; palpi porrected horizontally, short and very hairy, projecting a little beyond the head; head and eyes rather small; thorax subglobose and hairy; abdomen short, subcylindrical, tufted at the apex in the male with a pair of horny incurved spoon-shaped forceps; wings, superior subtrigonate, the apex a little angulated in the female; legs, posterior a little the longest; tibiæ, anterior short with an internal spine, the others longer, with a pair of spines at the apex, the posterior also with a pair below the middle; claws simple and distinct"

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* In Hulsts' tables this falls next to *Nyctiphanta* Hulst, from which it is bviously distinct.

Unfortunately, the best distinguishing characters are not mentioned by Kirby or Curtis, and Curtis' figure might be interpreted either way. The very hairy palpi, however, seem characteristic of *fasciata*. While *frigidaria* has hairy palpi they are not of the peculiar long bristly appearance of *fasciata*. Moreover, both authors mention prominently the male genitalia, which are extraordinarily conspicuous in *fasciata* but obscured, as in most Geometers, in *frigidaria*. Therefore what evidence can be secured from the descriptions indicates that *Psychophora* applies rather to *fasciata* than to *frigidaria*. It is true that *fasciata* does not seem to be the same species as *sabinii*, but there is quite a difference in the localities from which these two forms come, *sabinii* being from Melville Island and Boothia Felix, 1400 miles east of Point Barrow, Alaska, where *fasciata* was taken. Perhaps the matter cannot be settled finally until true *sabinii* is again at hand. But in the meantime the following seems most probably correct. A new generic name being required for *frigidaria*, I suggest *Scinneria* in honor of Dr. Henry Skinner. The genus will have the characters of Hulst's definition of *Psychophora*, quoted above.

Genus **PSYCHOPHORA** Kirby.

Synopsis of Species.

Fore wings with a basal dark patch and rather narrow median band; hind wings light on the outer fourth with two dark bands on the darker basal part of wing . . . . **sabinii** Kirby.

Fore wing with no basal patch, the median band broad, nearly reaching anal angle on inner margin; hind wing uniformly whitish. **fasciata** Skinner.

Genus **SCINNERIA** Dyar.

Type *frigidaria* Guen., with forms and synonyms as given by Hulst in Bulletin 52, U. S. National Museum.

A List of Lepidoptera Found in the Adirondack Mts.

By G. F. Comstock.

Lists of Adirondack insects being so few in number, my list may be of sufficient interest to the readers of the News to warrant its being published. It represents three years of butterfly collecting, and one year of careless moth collecting, very few moths having been taken at sugar or light. However, it contains the names of species never before found to my knowledge in the Adirondacks.

The collecting ground was Keene Valley, Essex County, New York, on the Ausable River, about ten miles east from Mt. Marcy, the highest peak of the Adirondacks. About seven miles above Keene Valley the Ausable River has its source in two beautiful lakes which bear its name. At the head of the upper lake there is a large marsh, very wild and full of deer, and in the centre of the marsh is a small grassy meadow, nearly grown up with spruce and laurel. Most of the rarer species of diurnals were taken in this open spot of the wilderness, known as the "Marcy Marsh" from its being traversed by the trail to that peak. On the bare summits of Mt. Marcy and Mt. Haystack I have never seen any butterflies, although I searched for them twice.

I am indebted to Mr. Wm. Beutenmuller of New York for the identification of most of the Noctuidæ.

PAPILIONIDÆ.

Papilio asterias, rare in August.

turnus, very common in June. I have seen 25 or 30 together at once around a mud-puddle.

Pieris rapæ, very common in summer and autumn.

oleracea, common in spring.

Colias philodice, very common everywhere. Albinic females common in autumn.

interior, very rare in July ; two specimens from Marcy Marsh, and one from summit of Mt. Baxter, near Keene Valley.

NYMPHALIDÆ.

Danais plexippus, rather common in autumn.

Argynnis cybele, Generally common in autumn, but in 1901 I saw none. No larger than *aphrodite*.

aphrodite, rather common in July and August.

atlantis, common same time as preceding species.
myrina, common in wet meadows in June and July.
bellona, more common than *myrina*.
Melitæa phæton, very rare in wet meadows.
Phyciodes tharos, very common in June.
batesii, very rare in June.
Grapta comma, common in autumn.
progne, common in August.
faunus, common in August.
gracilis, a single specimen from Keene Valley, but saw several in the Marcy Marsh in September.
j-album, common in autumn.
Vanessa antiopa, very common.
milbertii, common in July and August.
Pyrameis atalanta, generally common, but very rare in 1902.
huntera, common in autumn, but saw none in 1902.
cardui, very rare in August.
Limenitis disippus, common in September.
artemis, common in July.
Neonympha eurytris, common in June.
Debis portlandia, very rare in Keene Valley and at Ausable Lakes, July.
Satyrus nephele, common in July.

LYCÆNIDÆ.

Feniseca tarquinius, common, but local.
Chrysophanus hypophlæas, very common.
thoe, rare and local in July.
epixanthe, common in Marcy Marsh in July.
Lycæna comyntas, rather common in autumn.
pseudargiolus, common in spring.

HESPERIDÆ.

Pamphila hobomok, common in June.
" var. *pocahontas*, rare.
sassacus, rare in June.
leonardus, rare in June and September.
otho var. *egeremet*, common in July.
mystic, common in July.
cernes, very common in June and July.
Carterocephalus mandan, very rare in early spring.
Amblyscirtes vialis, common in June, 1900, but rare since.
samoset, rare in June.
Nisoniades icelus, rather common in June.
brizo, rare in June.
Eudamus pylades, common from June to August.

SPHINGIDÆ.

Hemaris thysbe.
" var. *uniformis.*
diffinis.
Deilephila lineata.
Pholus pandorus.
Everyx chœrilus.
Sphinx drupiferarum.
kalmiæ (common).
Amorpha modesta.
Smerinthus geminatus.
excæcatus.

BOMBYCIDÆ.

Lycomorpha pholus.
Eudryas grata.
Eubaphe immaculata var. *trimaculata*
Eubaphe aurantiaca var. *rubicundaria.*
Haploa lecontei.
Halisidota tesselaris.
Phragmatobia fuliginosa.
Arctia virgo
parthenice (common).
intermedia.
Oreta rosea.
Melalopha albosigma.
Telea polyphemus.
Actias luna.
Automeris io.

NOCTUIDÆ.

Pseudothyatira cymatophoroides.
" " var *expultrix.*
Arsilonche albovenosa
Apatela americana.
impressa.
afflicta.
Adelphagrotis prasina (in Marcy Marsh).
Noctua baja.
normaniana.
haruspica.
Feltia subgothica (very common).
Mamestra imbrifera.
latex.
renigera.
Hadena apamiformis.
devastatrix.
arctica.
Nephelodes minians.
Pyrophila pyramidoides.
Cosmia paleacea.
Orthosia ferruginoides (very common).
Scoliopteryx libatrix.
Plusia ærea (com. on sunflowers).
balluca.
mortuorum (at Aus. Lake).
ampla.
simplex (very common).
Alaria florida.
Drasteria erechtea (very common).
Euclidia cuspidea.
Catocala cerogama.
concumbens.
relicta.
" var. *phrynia.*
Parallelia bistriaris.
Panapoda rufimargo.
Bombolocha lubricalis.

GEOMETRIDÆ.

Prochœrodes clemataria.
transversata.
Tetracis lorata.
Epirranthis obfirmaria.
Therina fervidaria.
Acidalia insularia.
Stegania pustulario.
Opheroptera bruceata.
Baptria albovittata.
Petrophora diversilineata.
Rheumaptera hastata.
ruficiliata.

COLEOPTERA.

Cicindela sexguttata.
Necrophorus tomentosus.
Callidium antennatum.

Chrysochus auratus.
Ellichinia carrusca.
Harpalus viridiæneus.

ODONATA.

Cordulegaster maculatus.
Plathemis lydia.
Libellula pulchella.
Anax junius.
Æschna constricta.
Sympetrum semicinctum.
rubicundulum.

OTHER INSECTS.

Bombylius æqualis.
Pyrgota undata.
Cymbex americana.
Cicada tibicen.
Neuronia semifasciata.
Trimerotropis suffusa.

The Psychophora Mix Up.

BY HENRY SKINNER.

Through the courtesy of Dr. John B. Smith I have been able to study the specimens Dr. Hulst placed under *Psychophora*. There are four specimens, labelled as follows: *Psychophora sabinii* Curtis, Polaris Bay, *Cidaria phocata* Moesch, typical, Laborador, *Psychophora* var. *polaris* Hulst, Polaris Bay, *Glaucopteryx immaculata* Skinner, typical, McCormick's Bay, Greenland. The above geometers belong to the same genus and are not related to *Psychophora* of Curtis. *Psychophora sabinii* Hulst, not Curtis, is a synonym of *Cidaria phocata* Moesch. *Psychophora* var. *polaris* Hulst is an immaculate variety of *phocata* Moesch. *Glaucopteryx immaculata* Skinner and Meng. is a different species, and is probably a variety of *Glaucopteryx* (*Larentia*) *polata* Dup. as the latter were taken in some numbers at the same time and place in Greenland. It is certain that Dr. Hulst never saw the true *Psychophora*. Those mentioned by Sir. Geo. Hampson are evidently not *Psychophora sabinii* Curtis. It is also probable that Dr. Packard did not know the true *Psychophora*. The way these things get mixed in the literature is something appalling. The specimens in poor condition and haste in describing is responsible for some of it. Whether Dr. Dyar's new genus is valid I am not prepared to say, as it would first be necessary to critically examine *Larentia*, *Cidaria*, *Glaucopteryx*, *Amœbe*, *Aplocera*, and doubtless many others.

Records of Lepidoptera in New Jersey.

BY PROF. HENRY WORMSBACHER.

The following were collected during the season of 1902 in Hudson County, Passaic County and Hackensack County, New Jersey, by Prof. Henry Wormsbacher, Jersey City, N. J.

* **Libythea bachmanni** (Kirt).

(Adult)—Fort Lee, July, 11.

† **Enyo lugubris** (Linn.).

Taken at light, Bergen Point, Sept. 24.

* **Deilephila chamænerii** (Harr).

August 2, Passaic Co.

Philampelus linnei (Grt. & Rob.).

Taken at light in Greenwood Lake, Aug. 31.

Ampelophaga versicolor (Harr).

(Larvæ)—Aug. 18, Fort Lee.

Sphinx kalmiæ (Sm. & Abb).

(Eggs)—June 27; July 8, 11, 15, 22, 30; Aug. 1, 3, 8. (Larvæ)—July 22, 30.

‡ **Sphinx Chersis**.

Aug. 3, 4, 8; Sept. 7 (Adults)—Aug. 13, 21 (all taken in Passaic Co.).

Sphinx luscitiosa (Clem).

(Eggs)—June 13, 18. (Larvæ)—July 8, 11, 16, 21. (Adult)—July 28, 30 (taken near Passaic).

Dolba hylæus (Dru).

(Eggs)—June 15, 17. (Larvæ)—July 25; Aug. 1, 12, 15, 26; Sept. 1, 8 (taken in Woodridge, Bergen Co.).

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* This means very rare.

† This means not listed in Smith's State Book, and therefore new to New Jersey.

‡ Sphinx Chersis: (Eggs)—July 22, 23, 30; August 1, 3, 4, 8, 10, 11. (Larvæ)—July 15; August 1, 3, 8, 10, 16, 17, 24, 26, 29, 31; September 1, 7, 8, 10, 12, 14, 21; October 2. (Adult)—August 4.

† **Chlænogramma jasminearum** (Bdv.).

(Eggs)—July 9, 22, 28. (Larvæ)—July 30; Aug. 1, 4, 8, 10, 11, 16, 17, 29; Sept. 5, 8, 19 (Hasbrook Heights, Hackensack Co.).

Triptogon modesta (Harr).

(Larvæ)—Aug. 22; Sept. 3 (Hackensack, N. J.).

† **Paonias Astylus** (Dru).

(Larvæ)—Sept. 10, 12, 16, 19, 21; Oct. 3, 5, 10 (Coytsville, near Fort Lee).

Attacus angulifera (Wlk).

(Larvæ)—Aug. 6, 14, 25; Sept. 16 (Bayonne, N. J., and Coytsville).

Citheronia regalis (Fabr).

(Adult)—July 15. (Larvæ)—Aug. 2, 10, 12, 18, 26, 29; Sept. 5, 16, 23, 25 (Coytsville, Little Ferry and Woodridge).

Dryocampa rubicunda (Fabr).

(Larvæ)—Aug. 15, 26 (Woodbridge, N. J.).

Tolype vellada (Stoll).

(Larvæ)—July 8 (Carlstadt, N. J.) (Pupæ)—Aug. 15, 26 (Woodridge).

* **Tolype laricis** (Fitch).

(Adult)—Sept. 10 (Woodridge, at light).

Ecpantheria scribonia (Stoll).

(Adult)—June 24 (Fort Lee).

Acronycta hasta (Gn).

(Larvæ)—Aug. 5, 13 (Westside, Greenville).

Acronycta afflicta (Grt)

(Adult)—July 29 (Woodridge).

Psyche confederata (G. R.).

(Larvæ)—May 24, 26, 29 (on dogwood (Fort Lee).

Trachea delicata (Grt).

(Adult)—Aug. 18 (Fort Lee).

† **Caradrina multifera** (Wlk).
(Adult)—Aug. 12 (Woodridge, N. J.).

* **Orthodes infirma** (Gn).
(Adult)—June 16 (Little Ferry). -

Xylina laticinerea (Grt).
(Adult)—Oct. 20 (Carlstadt).

Acontia delecta (Wlk).
(Adult)—Aug. 19 (Little Ferry).

† **Melipotis nigrescens** (G. & R.)
(Adult)—June 14 (Fort Lee).

Catocala relicta (Wlk).
(Adult)—Aug. 5 (Jersey City Heights).

Catocala relicta, var. **phrynia** (Edw.).
(Adult)—July 18 (Jersey City Heights).

Catocala subnata (Cr.).
(Adults—Aug. 2 (Passiac Co.).

† **Apatelodes angelica** (Grt).
(Larvæ)—Aug. 26, 29, 31; Sept. 5, 12, 16, 25 (Fort Lee and Coytsville).

Hyparpax aurora (S. & A.).
(Adult)—June 24; July 14 (Guttenberg and Fort Lee).

* **Œdemasia exima** (Grt).
(Adult)—June 14 (Fort Lee).

† **Ichthyura brucei.**
(Adult)—June 18 (near Passaic, N. J.).

* * *

A COURSE IN ENTOMOLOGY, to begin October, 1903, has been authorized by the Academic Council, University of Pennsylvania. It is to be an elective for students in Arts and Science and in Biology, and will be under the charge of Dr. P. P. Calvert.

ON THE 9th of October, 1902, Prof. C. O. Thurston, of Kingston, Luzerne Co., Pa., found a specimen of *Thysania zenobia* on a telephone pole, near an electric light —HENRY SKINNER.

The Coccidae of Ohio.

By George B. King, Lawrence, Mass.

In Bulletin No. 37, New Series, U. S. Department of Agriculture, Division of Entomology, 1902, pp. 109–113, will be found a partial list of the Coccidæ of Ohio, by F. M. Webster and A. F. Burgess.

The authors of the list give Prof. Cockerell and myself due credit for the identification of the larger portion of the Coccids listed. The list, however, by some means, is awfully mixed and misleading; so much so, that Prof. Cockerell wishes me to publish a revised list, and sent me a box of scales, which he had received from Prof. J. G. Sanders, collected in Ohio by him. These have been identified as follows:

Eulecanium quercitronis Fitch on *Quercus alba* at Catawba, O., July 29, 1902. The locality and scale are new to the Ohio list.

Eulecanium fletcheri Ckll. on cedar at Catawba, I. S. O., July 29, 1902. A new locality.

Aspidiotus ancylus Putn. on *Tilia americana* at Cleveland, O., Aug. 25, 1902. A new food plant for the Ohio list.

Aspidiotus perniciosus Comst. kilmarneck willow (*Salix capræ* var. *pendca*) at Pinesville, O., July 19, 1902.

Aspidiotus ostreæformis Curtis on willow, Pomesville, O., July 19, 1902. A new locality and food plant for Ohio list.

Chionaspis furfurus Fitch on *Hicoria alba* at Catawba, I. S. O., July 25, 1902. A new food plant and locality for Ohio list.

Chionaspis lintneri Comst. on *Cornus florida* ? Sandusky, O., August, 1902. Coll. of H. Osborn. New to the Ohio list.

Mytilaspis ulmi L. on *Populus deltoides*, Pinesville, O., July 2, 1902. A new locality.

The following are the leading errors in the Ohio list: No. 4 (following the published list) *Phenococcus aceris* Sign. This species has never been found in North America. A species allied to it has been described in Can. Ent., August 1902, p. 211, as *Phenacoccus acericola* King.

Pseudococcus longispinus Targ. No. 5, *Pseudococcus* (*Dactylopius*) *citri* Risso not of Boisduval.

No. 6 and 7 are one species. There is no such thing as *Dactylopius adonidum.* See Proc. Acad. Nat. Sci. Phil., 1899, p. 261, under *Coccus adonidium* (the article is by Prof. Cockerell).

No. 13, *Asterolecanium variolosum* Ratz. not of Ckll.

No. 17 and 18 are now separated from *Lecanium* and placed in the subgenus *Eulecanium.*

No. 19, *Eulecanium oleæ* belongs to the genus *Saissetia.*

No. 27, *Eulecanium nigrum* and *depressum* are distinct species, which also belong to the genus *Saissetia*; both species are little understood.

No. 45 and 49 are one species—*Aspidiotus ficus*: and *Chrysomphalus aonidum* being correct. See Biologia Centrali-Americana, 1899, p. 25.

On the genera *Diaspis* and *Aulacaspis,* see Entomologist, vol. 35, p. 58, 1902. I must confess that I do not know how to place these, as they seem to be somewhat mixed as yet, their generic characters not being well defined.

Nos. 57, 58 and 60 are all one species, *Mytilaspis ulmi* being correct.

No. 59 is *Mytilaspis becki* not *M. citricola.*

Nos. 61 and 69 are one species; *Howardia biclavis* is correct, it was described as a *Chionaspis.*

The revised list is as follows:

- Eriococcus azaleæ *Comst.*
- Gossyparia ulmi *Geoff.*
- Phenacoccus osborni *Sanders.*
  - acericola *King.*
- Dactylopius citri *Risso.*
  - longispinus *Targ.*
- Kermes galliformis *Riley.*
  - trinolatus *Bogue.*
  - pubescens *Bogue.*
  - andrei *King.*
- Orthezia americana *Walk.*
  - insignis *Dougl.*
- Lecaniodiaspis celtidis *Ckll.*
- Asterolecanium variolosum *Ratz.*
- Pulvinaria innumerabilis *Rathv.*
  - acericola *W. and R.*
- Eulecanium armeniacum *Craw.*
  - caryæ *Fitch.*
  - fletcheri *Ckll.*
  - cockerelli *Hunter.*
  - fitchi *Sign.*
  - canadense *Ckll.*
  - websteri *King.*
  - tulipiferæ *Cook.*
  - magnoliarum *Ckll.*
  - nigrofasciatum *Perg.*
  - persicæ *Fabr.*
  - quercifex *Fitch.*
  - prunastri *Fonsc.*
- Saissetia oleæ *Bernard.*
  - depressum *Targ.*
  - hemisphærica *Targ.*

Calymnatus hesperidum *Linn.*
Aspidiotus hederæ *var.* nerii *Bouché.*
juglans-regiæ *Comst.*
ostreæformis *Curtis.*
rapax *Comst.*
perniciosus *Comst.*
aurantii *Mask.*
ancylus *Putn.*
forbesi *Johns.*
cyanophylli *Sign.*
obscurus *Comst.*
comstocki *Johns.*
uvæ *Comst.*
glanduliferus *Ckll.*
crawii *Ckll.*
Chrysomphalus dictyospermi *Morg.*
aonidum *Linn.*
Diaspis cacti *Comst.*
boisduvalii *Sign.*
Aulacaspis pentagona *Targ.*
rosæ *Bouché.*
bromeliæ *Kerner.*
Parlatoria pergandei *Comst.*
zizyphus *Lucas.*
Mytilaspis ulmi *Linn.*
becki *Newm.*
Chionaspis furfurus *Fitch.*
pinifolii *Fitch.*
corni *Cooley.*
salicis-niger *Walsh.*
americana *Johns.*
ortholobis *Comst.*
euonymi *Comst.*
lintneri
Howardia biclavis *Comst.*

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Fitch First Rpt. N. Y., 1856, p. 32.
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Insect Life, vol. 4, p. 213.

The original list, as published, cited 71 species. We have reduced it to 65 and have added two more species new to Ohio, which brings the revised list to 67.

WILL YOU KINDLY publish the following note of explanation? In Bulletin 58 of the Delaware Experiment Station recently published, the legend to Plate III, fig. b, states that scales are on "orange peel." This should be apple peel. The error occurred by the writer not having opportunity to read proof.—E. DWIGHT SANDERSON.

ENTOMOLOGICAL NEWS.

[The Conductors of Entomological News solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and, as far as may be, will be published according to date of reception. Entomological News has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form, will be given free, when they are wanted; and this should be so stated on the MS., along with the number desired. The receipt of all papers will be acknowledged.—Ed.

PHILADELPHIA, PA., JUNE, 1903.

The News is in a more prosperous condition at the present time than at any period of its history. We have maintained the same low price, but have greatly increased the number of pages and the value and number of our illustrations. The present issue contains forty-six pages, as we are desirous to get the papers we have on hand into print as soon as possible. There is no good reason why the News should not contain at least fifty pages in each number, as the interest in Entomology has materially increased in the last five years. It would benefit all our subscribers if each one of them would get at least one additional subscription so that we could maintain a journal that would fully represent the Entomological interest of America and be a credit to the study. A well illustrated, fifty-page, monthly journal of Entomology is a pleasant thing to contemplate, and we hope to see it come to pass in the near future.

◆

NEARLY all the plates of Sphingidæ, by Weidemeyer, Calverly and Edwards have been sold. These plates were commenced about 1862 and never issued. The American Entomological Society purchased the copies owned by Mr. W. H. Edwards, which are now being sold. There are twenty-seven plates and numerous figures. The limited edition will make this work very scarce and valuable. An account of the history of the plates and an up-to-date list of the species accompanies each set.

CASSIDA NIGRIPES.—In Bull. 35, N. M. Exp. Sta., I commented on the occurrence of this sweet potato pest in places where sweet potatoes are not grown. At Las Vegas, N. M., I find that it lives upon *Convolvulus incanus*. A specimen from this plant has been examined at the National Museum, and found to be genuine *C. nigripes*.—T. D. A. COCKERELL.

Entomological Literature.

A GENEALOGIC STUDY OF DRAGON-FLY WING VENATION. By JAMES G. NEEDHAM, of Lake Forest College, Lake Forest, Illinois. Proceedings U. S National Museum, xxvi, pp. 703-764, pls. xxxi-liv, 44 text figs. Washington, 1903.

This is that "extended paper upon the venation of this order" that we were promised in The American Naturalist for December, 1898, and which certain of us have been eagerly expecting. The realization is not disappointing, for here is a wealth of structural details and of suggestions, often of proof, as to the meaning and use of those details. The subject matter is technical and special, and only those who will carefully study the numerous and excellent plates and figures will really appreciate the text. The Odonate wing is treated by areas, as those of the stigma, the nodus, the quadrangle, and the anal loop. An important "summary of the more general tendencies of vein evolution within the order" is given on pages 730 and 731.

The lines of specialization of venation are traced, first for the Anisoptera, then for the Zygoptera, leading to "a scheme of sub-families for the order which seems to me to be, in the light of the evidence that present knowledge of venation affords, an approximation toward equivalent values for these groups." This scheme follows:

Anisoptera: Family Æschnidæ, subfamilies 1. Gomphinæ (recent and fossil), 2. Petalurinæ (r., f.), 3. Stenophlebinæ (f), 4. Cordulegasterinæ (r., f.), 5. Chlorogomphinæ (r.), 6. Æschninæ (r., f.), 7 Æschnidiinæ (f.), 8. Heterophlebinæ* (f.).

Family Libellulidæ, subfamilies, 9. Macromiinæ (r.), 10. Cordulinæ (r. f.), 11. Libellulinæ (r. f).

Zygoptera: Family Calopterygidæ, subfamilies, 12. Palæophlebinæ† (r.), 13. Epallaginæ (r. f.). 14, Vestalinæ (r.) 15, Thorinæ (r.)

Family Agrionidæ: subfamilies, 16. Lestinæ (r. f.), 17. Agrioninæ (r. f.).

It will be noted that the Anisoptera begin this series. The relative primitiveness of these two suborders (*pace* Dr. Gill) is nowhere distinctly discussed. Expressions supporting the claims of the Zygoptera may be found on pages 719*, 731 and 732, while the Anisoptera may find comfort on pages 711, 721 and 722. The various groups are nowhere formally defined, and it is not always easy to determine their limits from the references made to them in the text.

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* Placed among the Calopterygidæ, in the table on page 750, but belonging to the Æschnidæ, as indicated on page 732, and as Prof. Needham has called to our attention by mail; the number given it above is quite conjectural as a statement of his ideas, however.

† This is for the genus *Palæophlebia* described by de Selys from Japan in Comp Rend. Soc. Ent. Belg., xxxiii, p. clv., for Sept. 7, 1889. There is also a fossil Odonate of the same generic name, described by Brauer, from the East Siberian Jurassic, in Mem. Imp Sci., St Petersbourg, xxxvi, 15, p 6, "imprimé Mars 1889," and referred by him to the legion Podagrion Brauer's name apparently having priority, another term must be found for the Selysian genus, and I would therefore suggest **Epiophlebia** from [illegible] and φλέψ, φλεβός.

"Dynamic control in wing evolution" is considered with especial reference to the formation of bracing veins. In the summary of the article is included a criticism of the present systematic grouping of fossil Odonata with which the writer can well agree, on independent grounds.

The ontogenetic method of study of wing veins which we owe to Professors Comstock and Needham has certainly yielded some striking surprises in the Odonata as well as among other insects. One of these is what Prof. Needham here calls "that most distinctive peculiarity of dragon-fly wings, the crossing of the radial sector [subnodal sector of de Selys and Hagen] over two branches of the media [principal and nodal sectors, de S. and H.] and the development of the bridge" [basal portion of the subnodal sector]. Another illustration is afforded by the true history of the vein whose basal end was termed postcosta by de Selys In 1893 there seemed to be good reason for believing that it was continued to the wing margin by the "second sector of the triangle," and I considered the two as one and the same vein. Now it is shown that this apparently continuous vein (e. g. in some Zygoptera) is developed from two originally distinct and separate tracheæ.

Finally, attention should be called to the fact that there are numerous suggestions for further research contained in this paper, which its author modestly terms "only a beginning of what should be done in the study of the venation of the order. PHILIP P. CALVERT.

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* "Beyond," in line 14 from the bottom, is apparently an error for "proximal to"

Doings of Societies.

At the meeting of the Feldman Collecting Social held April 15th, at the residence of Mr. H. W. Wenzel, 1523 S. 13th St., Philadelphia, eleven persons were present. Mr. H. W. Wenzel read a letter from our fellow-member, Dr. Castle, who is now collecting in Florida.

Mr. Biederman spoke on collecting *Arctinotus lucidus* on the Rogue river. He had taken over 20 specimens from February 13th to 21st., the thermometer being from 10 to 12 degrees above zero, and the specimens had evidently just emerged from the chrysalis. They apparently do not fly before 9.30 P.M., and he had never captured it after 1 A. M. He had not sucmay therefore be considered rare. Dr. Skinner exhibited a living tick, *Ornithodorus megnini* Duges. It had been for several months in the ear of a man who lived in Fremont Co., Idaho, for several months. It emerged from the ear on Sept. 15, 1902.* The specimen was kindly identified by Mr. Nathan Banks, who wrote as follows: "It occurs in Mexico and the Southwest. I have seen specimens from as far north as Nebraska; I guess this is about the same region. It occurs in the ears of horses, cattle, etc., and sometimes in man. It is usually in the ear in the nymphal condition. They can usually be dislodged by the use of a little oil." The specimen was received wrapped in a paper and has since been kept in a pill box. The specimen is therefore nearly a year old, and still hale and hearty.

Mr. Laurent exhibited a specimen of *Tramea carolina* taken April 15th, in Fairmount Park, by Horace Ebert. The previous earliest record was May 26th (Calvert). Dr. Skinner exhibited the larva of *Arzama melanopyga* Grote, which feeds on the bonnet-plant in Florida. These larvæ attract blackbirds in great numbers, the birds pulling them from the stalks of the plants.

Mr. Rehn exhibited some roaches covering the old and new worlds. *Ectobius*, new to New Zealand, was shown. Also some new species from the West Indies. *Colocampra*, n. sp. from Cuba, and a new sp. of *Epilampra* from South America. The difference between some of these genera were pointed out. Dr. Calvert spoke on the formation of local races in the dragonflies. *Amphigrion saucium* was mentioned. Those from Dakota and westward are hairier than those from further east. *Ischnura denticollis* ranges from southern California and Arizona to southern Mexico Those from Southern California and Arizona have fewer cross-veins on the second half of the forewings than those from farther South. *Calopteryx æquabalis*, from the east, has a race known as *yakima* from the west. The latter has the dark color on the tip of the wing of greater extent. Variations in size in a single species was shown in specimens of *Megaloprepus cærulatus* from Panama.

HENRY SKINNER, *Secretary*.

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* At this time, May 20, '03, it is still alive.

EXCHANGES.

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☞ These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and only when necessary those at the top (being longest in) are discontinued.

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For Exchange.—Coleoptera of Southwestern Penna., in sets of four, with data for Coleoptera or Lepidoptera. Send lists, T. N. Brown, Uniontown, Pa.

Wanted.—Cerambycidæ (Longicorns) of the Americas. State number, price and locality. Fred. C. Bowditch, 164 Rawson Rd., Norfolk Co., Mass.

Pupæ Exchange.—Crysalids of H. Maia and others; also cocoons to exchange for other native pupæ and cocoons. W. T. Buxton, 152 Walnut St., Somerville, Mass.

Wanted—Cocoons *Attacus angulifera*, *ceanothi*, *gloveri*, *A. luna*, *E. imperialis*, to exchange for butterflies and moths. *Catocala* in papers from Illinois.—Adolf Mares, 1671 W. 23d St., Chicago, Ill.

Tortricidæ, Tineidæ and **Pyralidæ**—I will identify specimens of these subfamilies, from all N. Am. localities, for privilege of examination and records. Genera and specific names per Dyar's Catalogue. Will also exchange.—W. D. Kearfoot, 114 Liberty St., New York, N. Y.

Diptera.—*Rhamphomyia* of the world wanted. Will exchange for Texas or Illinois insects (not Lepidoptera).—A. L. Melander, The University of Chicago.

Wanted, by purchase or exchange, photographic prints and lantern slides illustrative of insect life.—W. L. W. Field, Milton, Mass.

Wanted—December, 1899, Entomological News. Address F. W. Friday, 17 Grace St., Pittsburg, Pa.

Wanted.—*Catocala* and *Sphinx* of the Northwest and Southwest in exchange for other native exotic and European butterflies and moths. Send list to Chas. F. Timm, 131 Ralph St., Brooklyn, N. Y.

Exchanges solicited in moths, butterflies of N. America. Catocalas preferred. Send lists to Jos. H. Reading, 775 N. Rockwell St., Chicago, Illinois

Lepidoptera from all parts of the world to exchange for species not in my collection.—Frank Haimbach, No. 1309 Allegheny Avenue, Philadelphia, Pa., U. S. A

Lepidoptera.—Fertile eggs of *Argynnis diana* wanted—John Ruston, 10 Carlton Road, Workrop, Nottinghamshire, England.

North American Butterflies wanted in exchange for Lepidoptera of Southern California.—P. H. Hart, Pasadena, Cal.

Butterflies for exchange. Expect to have limited number of *Œneis chryxus*, *P. smintheus*, *Basilarchia wiedemeyeri* and others during summer. Send lists of what you have.—A M. Hendee, Central City, Colo.

Will collect in all orders. Would like named or unamed Coleoptera in exchange. Please write to G. Chagnon, P. O. Box 186 Montreal, Can.

Moths of Pennsylvania and New Jersey. The undersigned will give good exchange in cash or specimens for moths of Pennsylvania and New Jersey that are new to his collection. Send list of rare species only.—Philip Laurent, 31 East Mt. Airy Ave, Philadelphia, Pa.

Wanted.—Sphegidæ of North America, Mexico and the West Indies (as included in Cresson's Synopsis) for study in connection with a revision of the group. Material sent will be returned named as far as possible.—H. T. Fernald, Amherst, Mass

I will give Lepidoptera, publications or cash, for Smith's "Monograph of the Sphingids," published in Vol. xv, Trans. Ent. Soc., Acad. Nat Sciences, 1888 -H. H. Newcomb, 35 Court St., Boston.

Hymenoptera.—Will be pleased to send duplicates in return for identifications.—Charles Stevenson, 906 St. Urbain Street, Montreal, Canada.

Wanted for cash, fertile ova of *regalis*, *imperialis*, *triptogon modesta*, *Angulifera*. -H. M. Peinze, Northboro, Mass.

Will collect in all orders, insects of South East New England for Lepidoptera of North America.—L. W. Tilden, Box 54, New Bedford, Mass.

Wanted.- Fertile eggs, *Cith. regalis*, also all kinds *Thecla* and *Lycaena* for Lepidoptera from here. -H. M. Boyer, 220 Hudson Street, Reading, Pa.

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Desirable Lepidoptera for exchange. Would like to receive lists of good species. John Comstock, 1572 Ridge Ave., Evanston, Ill.

I will collect Lepidoptera, Coleoptera, Hpmenoptera, Hemipteraof this locality, in exchange for Diurnal Ledidoptera of the United States, or named Diurnals of foreign countries. Write at once.—M. E. Hoag, D. D. S, Oakville, Iowa, U. S A.

I will give Lepidoptera, publications or cash for Smith's "Monograph of the Sphingids," published in Vol. xv, Trans. Ent. Soc., 1888.—H. H. Newcomb, 35 Court Street, Boston.

Parnidæ. Parnidæ of the world wanted. Will pay cash or give exchange (Correspondence French, German or English).—William D. Richardson, Fredericksburg, Virginia.

Wanted. Ent. News, vol. viii, No. 6. Louis H. Joutel, 164 E. 117th Street, New York City.

Arctians. Living eggs or larvæ of any North American moths of the genus *Apantesis* wanted for purposes of studying preparatory stages. Will be glad to render help, if possible, as to wants of anyone assisting. Arthur Gibson, Cent. Exp. Farm, Ottawa Can.

N. A. Lepidoptera desired. Those willing to collect, in exchange for European specimens, please communicate with James McDunnough, [illegible] Western Rd., Glasgow, Scot.

Lepidoptera. I have *Paonias astylus*, *Chalcnogramma jasminearum*, [illegible] and other Sphingidæ of the Atlantic States for [illegible] specimens not in my collection. Send lists.—Prof. Henry Wormsbecher, [illegible] Hutton St., Jersey City, N. J

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Vol. XIV. No. 7

ENTOMOLOGICAL NEWS

Heteronotus vulnerans.

SEPTEMBER, 1903.

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EXOTIC LEPIDOPTERA

Ernest Swinhoe, 37 Addison Gardens, London W., England

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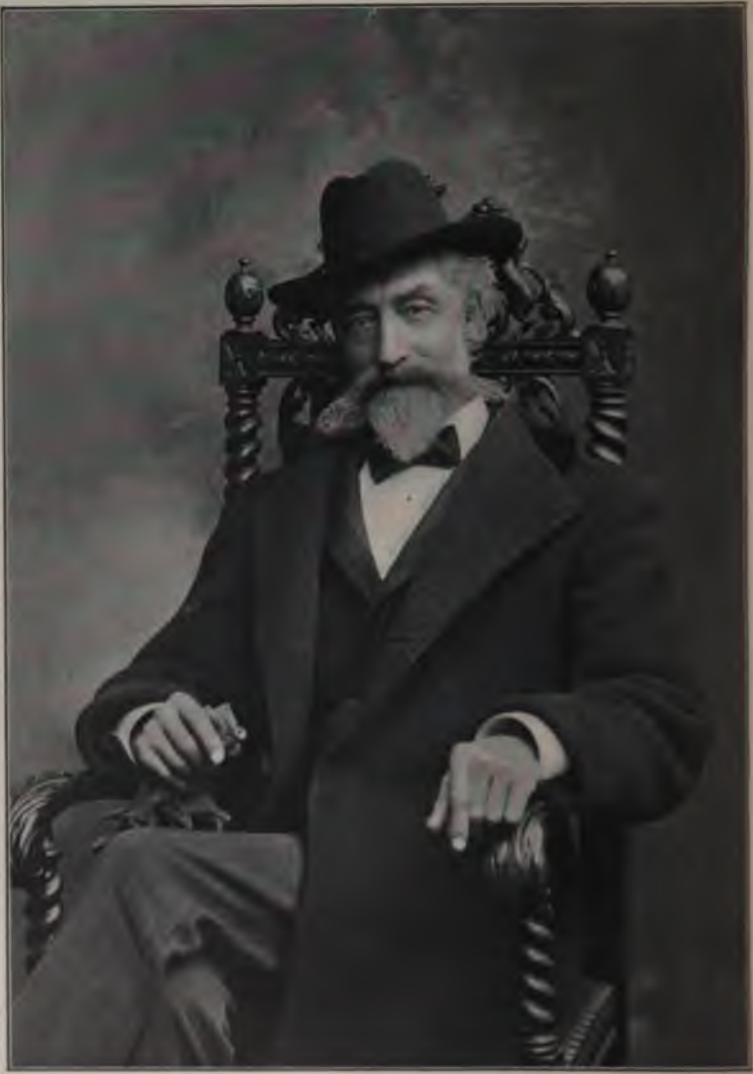

CHARLES ALFRED BLAKE.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XIV. SEPTEMBER, 1903. No. 7.

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Charles Alfred Blake.

Mr. Blake died June 24, 1903. He was suddenly stricken with Angina pectoris and expired in a few minutes. He was born at Brighton, England, July 23, 1834, and came to America in 1849. He received his education in the English Naval School, at Greenwich. When quite a small boy he was fond of rearing silk-worms and it became quite a hobby with him. He was thus led to take an interest in moths and butterflies in general. For over forty years he was in the dental and surgical instrument business and was thus led to make entomological forceps, and the Blake pinning forceps have been favorably known for many years. On October 22d, 1860, Mr. Blake was elected a member of the American Entomological Society and until recent years was a very active member, being an ardent collector and interested in all orders, but worked particularly in the Hymenoptera and Lepidoptera. He formed quite a large collection which is now in the possession of his children. In the Proc. Ent. Soc., Phila., Vol. II, 279, 1863, appears the following title: Description of a Supposed New Genus and Species of Saturniidæ from the Rocky Mountains. By C. A. Blake. *Coloradia* nov. gen. *pandora* n. sp. (see pl. 7).

The description of this new and fine genus and species appears to have been his first effort as an author. At this time the collections of the American Entomological Society were in charge of what were called "Standing Committees" and Mr. Blake was on the Committees for Lepidoptera, Insect Architecture and also on the Library Committee. His next article was not so fortunate as *Papilio grotei*[*] proved to be a synonym of *P. gundlachianus*.

In 1870[†] he described *Mutilla cressoni* and *M. nortoni*, and evidently became greatly interested in this family of the Hymenoptera, for in the same volume (pp. 217–265) will be found a "Synopsis of the Mutillidæ of North America." This was a very valuable contribution to the literature of the Hymenoptera. Tables were given to separate the species and also quite a number of text figures; many new species and some new genera were described. Subsequent papers on the Mutillidæ appeared in the same publication as follows: Vol. IV, p. 71, 1872; Vol. VII, p. 243, 1878, and a monograph of the family, Vol. XIII, p. 179, 1886. In the first volume of the ENT. NEWS are a number of short articles and notes, and on page 127 a humorous article in which the names of a number of members of the American Entomological Society are introduced. His last article appeared in ENT. NEWS, Vol. II, p. 33, 1891, since which time he has not taken an active part in the work of the Am. Ent. Soc. or in entomology. Mr. Blake was a tall, fine looking man, genial, courteous, and a pleasant companion. He was a representative of the early days in American Entomology and did very good work, and will always be remembered by his studies in the Mutillidæ. Those who capture *Coloradia pandora* will also wish to know something of the describer of such a fine genus and species.

In the publication of the "Proceedings" and the earlier volumes of the "Transactions," which were printed by the members of the Society in its own printing office, Mr. Blake took an active part and rendered much valuable assistance both in composition and presswork. He was a useful Committeeman, always ready and willing to devote his spare time to any work that was to be done, and what he did, was well done. Mr. E. T. Cresson speaks of the early days of the Society as follows:

---

[*] Proc. Ent. Soc., Phila., Vol. IV., p. 313, 1865.

[†] Trans. Am. Ent. Soc., Vol. III, p. 68, 1870.

"I remember the many nights Mr. Blake toiled with me in the publication of the Proceedings and Transactions, and he was ever ready and willing to help me when no others volunteered; we worked together side by side at the case, and while I rolled on the ink, he pulled the press—being the stronger. He was a cheerful companion, and his good humor rendered the work easier and the time passed more pleasantly. The Society is greatly indebted to him for his endeavors in its behalf."

He leaves two sons and several daughters, none of whom take an interest in the subject of entomology. His fine collection will be presented to the American Entomological Society.

A New Bee of the Genus Andrena.

By T. D. A. Cockerell.

Andrena placitæ, n. sp.—♂. Length about 7 mm.; black, the abdomen with a slight greenish lustre; pubescence of head and thorax, above and below, abundant, long and white; face densely covered with white hair; abdominal segments with apical white hair-bands, broadly interrupted on the first and second; apex of abdomen densely tufted with white hair. Process of labrum truncate-subemarginate; mesothorax dull, minutely rugose, sparsely but distinctly punctate; the anterior part of mesothorax is inclined to be greenish, the posterior part and scutellum are slightly purplish; enclosure of metathorax minutely rugose; tegulæ pale testaceous; wings a little yellowish, iridescent, stigma and nervures dark reddish-brown; stigma large; legs black with white hair, the tarsi rather dark ferruginous; abdomen microscopically tessellate. Extremely similar to *A. geranii*, Rob., but distinguished by the white tuft at end of abdomen, the somewhat narrower abdomen, the much denser hair on face, and the color of the antennæ. The first recurrent nervure enters the second submarginal cell at little beyond its middle. *A. illinoensis*, which has the tufted abdomen, is very different by its even larger stigma, of orange color. The color of the antennæ readily distiuguishes *A. placitæ* from *A. sapellonis*.

Hab.—Placita, New Mexico, about 6859 ft., April 25, 1903. (*T. D. A. & W. P. Cockerell.*)

Note on a Small Collection of Dragonflies (Odonata) from Baltimore, Maryland.

By Dr. F. Ris, Rheinau, Switzerland.

In the summer of 1891 I had occasion to collect a few dragonflies at Locust Point, Baltimore. The visit was a very short one, or rather there were two visits of five or six days each in the latter half of summer, at the end of July and at the end of August. I was then a ship's physician on a North German Lloyd steamer; many things had to be seen in these short visits to the United States, and dragonfly-hunting was but occasionally done in the immediate neighborhood of the Lloyd pier at Locust Point, where some swampy ground attracted the Neuropterist's attention. Of course the results of this hunting are quite modest, but nevertheless they seem to illustrate rather characteristically a certain type of coast fauna, so that I thought the enumeration of my captures might not be devoid of interest to the reader of Ent. News. Two species only were captured in Druidhill Park and near Towson town respectively; where not mentioned, the locality is Locust Point.

1. *Calopteryx maculata.* Not rare in Druidhill Park.

2. *Lestes rectangularis.* Very numerous; a conspicuous species with its elongate abdomen and bright blue eyes.

3. *L. disjunctus.* A few teneral specimens.

4. *Anomalagrion hastatum.* Common, females scarce.

5. *Ischnura verticalis.* Very abundant. The numerous females show a curious polymorphism. In some teneral females of the green form the upper side of segments 8 and 9 is largely blue. I cannot see a trace of this blue in adult green females and think I am sure that this condition is not due to fading of colors. All green females have the pale antehumeral bands narrow in the manner of males. In several orange females the antehumeral band is decidedly broader than in the male and green female, but there is left a black band on the humeral suture, so that the color-pattern remains the same. These females have the base of abdomen orange to the last fourth of segment 3; they are somewhat teneral and their orange is very bright. The majority of orange females

have no black at all, or but the very slightest trace of it, left on the humeral suture, so that the color-pattern of the thorax is changed; ground color orange with a broad dorsal median band bronzy black. These individuals are fully adult and their orange is of a dull brownish shade. They correspond exactly to the orange forms of the common European *I. elegans* and the not less common Indo-African *I. senegalensis*.

It is just possible, but not very probable, that the two modifications of the green and yellow form respectively are only conditions of age. Observers might well give some attention to the question. One might further suggest the confusion of two different species; but I cannot find any other difference in the two sets of females, and the many males are all identical.

Fully colored females show a curious dull greyish blue pulverulence, which, leaving the last third or fourth of each segment black, produces a peculiar annular color-pattern, quite unknown in old-world Ischnuræ.

6. *I. ramburi*. Less common than *verticalis*, but still in good numbers. Orange females much more prevalent, no black on their humeral sutures.

7. *Enallagma durum*. Two females of this large southern species were found.

8. *E. civile*. Common, females scarce.

9. *E. aspersum*. Scarce on the first visit at end of July, rather numerous a month later.

10. *Nehalennia posita*. Very abundant. Adult females show the same annular pattern of dull grey pulverulence as *I. verticalis*.

11. *Argia violacea*. Common in the forest near Towson town.

12. *Anax junius*. One male captured, others seen.

13. *Libellula pulchella*. Two specimens captured and others seen, scarce and wary.

14. *L. auripennis*. Very abundant and a most conspicuous insect by its bright red body and rich golden wings. Both sexes in about equal numbers and easily captured.

15. *Plathemis lydia*. Common.

16. *Celithemis eponina*. Scarce and wary; but one female captured.

17. *Perithemis domitia.* One female.

18. *Pantala flavescens.* One male captured and other specimens seen.

19. *Diplax vicina.* A few teneral specimens in July, not seen again a month later.

20. *Trithemis berenice.* A single female. Registering this species as *Trithemis* needs justification, when very competent American observers have already removed it to *Micrathyria.*

The main character by which *Micrathyria* has been separated from (American) *Trithemis*, is the separate origin of the upper sector of triangle in hind wings. But a very homogeneous and natural association of species—a good genus—can be obtained, when another neural character is added; in what I consider now as true *Micrathyria,*—about 15 distinct species are known to me—there exists always a supplementary nervule between the principal sector (M_1) and the "bridge" besides the normal one, which always in Libellulinæ precedes the "oblique vein." I am indebted to Messrs. Comstock and Needham's well-known paper on the wings of insects for the knowledge of the taxonomic importance of this region. This supplementary nervule, which in German terminology I called the "Antenodal-Brückenquerader," is absolutely characteristic for typical *Micrathyria* (*didyma*, *septima*, *hageni*, *æqualis*, *debilis*, etc.); it is always absent in *Trithemis.* Absent it is in *berenice*, and so I believe *berenice* cannot remain with *Micrathyria*, notwithstanding its separated triangular sectors in the hind wings. The same condition of neuration—separated sectors, supplementary nervule absent—exists in other species, as in the Amazonian *Trith. attenuata* Kby. and the wide-ranging *Trith. minuscula.* There seem to exist sufficient reasons why such species should not be separated from *Trithemis*, and so the right place for *berenice* too may be this genus. An undescribed Amazonian species in the de Selys' collection and perhaps even *attenuata* are possibly its nearest relatives.

I have to add a word on the generic name of *Trithemis.* It is possible and advisable to separate Old World from American *Trithemis.* (I know that this is the opinion of such an authority as Mr. McLachlan). Besides a notable difference in facies, there is a slight but constant neural character, whereby the two groups can be separated. Old World *Trithemis* have constantly two rows of cells between the subnodal and supplementary sectors ; a single row of cells in this area is as constant in American *Trithemis*. Only we have then to remove *umbrata* and *funerea* from the American genus ; they have two rows of cells, but their nodal sector is distinctly waved, whereby they are separated from American as well as from Old World *Trithemis*. So we have :

Nodal sector waved—two rows of cells between subn. and suppl. s
umbrata and **funerea.**
Nodal sector straight—two rows id. . . . . Old World **Trithemis.**
one row id. . . . . American **Trithemis.**

Provisionally the accepted name of *Trithemis* may still unite the three groups, but generic names must be bestowed on them, when an attempt is made to bring better light into these numerous and sometimes difficult tropical forms.

21. *Mesothemis simplicicollis*. Very abundant, the most numerous of the Libellulinæ ; many of them alighted on the steamer in Chesapeake Bay when still far away from land.

22. *Pachydiplax longipennis*. Nearly as common as the last species but more confined to swampy grounds.

The prevalence of *Lib. auripennis*, *Mesoth. simplicicollis*, *Pachyd. longipennis*. *Anomalagr. hastatum*, as well as the presence of *Pantala flavescens*, *Trith. berenice* and *Enall. durum* give the Locust Point faunula a decidedly southern aspect. Moreover, for a European observer, the great abundance of minuscule forms—represented by *I. verticalis*, *A. hastatum*. *N. posita*—was a most striking feature ; it reminded me of the aspect of tropical swamps in India with their great abundance of the minute *Agriocnemis incisa*, or at Bahia with *Ceratura capreola*.

[It is appropriate to add here the following list of captures made near Chestertown, Kent County, Maryland, on the opposite side of Chesapeake Bay, between August 13 and 23, 1899, by Mr. E. G. Vanatta, of the Academy of Natural Sciences of Philadelphia. *Argia violacea*, 2 ♀; *Nehalennia posita*, 3 ♂, 3 ♀; *Enallagma durum*, 2 ♀; *Ischnura verticalis*, 1 ♀; *Libellula auripennis*, 14 ♂, 5 ♀; *L. cyanea* 1 ♂; *L. axillena vibrans*, 2 ♀; *L. pulchella*, 4 ♂, 1 ♀; *Plathemis lydia* (*trimaculata*), 1 ♂, 2 ♀; *Mesothemis simplicicollis*, 1 ♂.—PHILIP P. CALVERT.]

Palaeoxenus (Cryptostoma) Dohrnii Horn.

BY A. FENYES, Pasadena, Cal., May 23, 1903.

I found to-day a small colony of this beautiful Eucnemid under the bark of sugar pine at Wilson's Peak (5800 feet above sea-level). The beetles were congregated in a spot of about a square foot area, under the bark of an old sugar pine trunk, and owing to their rather sluggish locomotion, were easily bottled. Both sexes were represented, but *no* difference in the structure of the antennæ is noticeable, in accordance with the corrected statement of Dr. Horn, who in consequence changed the generic name from *Cryptostoma* to *Palæoxenus*.

When Horn described the species (January, 1878), he only had one female in his hands, and thought that it belonged to *Cryptostoma*. In his monograph of the Eucneminæ, etc. (January, 1886), he states: "This species is the only brightly colored form in our fauna. The specimen in my cabinet was given me by Dr. C. A. Dohrn, who possesses another, which was said to have been collected at San Diego, Cal., but as I have found at least one other species in the same lot from Yucatan, this species may be from that region."

Prof. H. C. Fall, in his List of the Coleoptera of Southern California (1901) says: "*Palæoxenus*, *P. dohrnii*, a species said to have been found near San Diego, but this is probably an error, as is suspected by Horn; the species is quite surely tropical."

It is evident from the above quotations, that the species has never been collected again since its description, which was published twenty-five years ago; a very noticeable circumstance, as the beetle is of large size (.60 inch, 15 mm.) and is brightly and strikingly colored.

The Dragonflies (Odonata) of Tennessee, with a Few Records for Virginia and Alabama.

By E. B. Williamson, Bluffton, Indiana.

In the preparation of this list I am indebted to Mr. C. C. Adams for the pleasure of studying the odonates collected by himself in Virginia, Alabama and Tennessee. In the list his records are properly credited to him with the initials C. C. A. I am also under obligations to Dr. Calvert, as will appear below. My collecting was done about Nashville, from September 3, 1900, to June 7, 1901. On many of my excursions I enjoyed the assistance and companionship of Mr. P. H. Whiting, a student in Vanderbilt University. For valuable advice as to suitable localities and for aid in collecting nymphs thanks are due Mr. Albert Guess, hunter and fisherman, at home along the Cumberland.

The environs of Nashville are not especially favorable to odonate life. There are no natural lakes or ponds of any size and depth. Artificial ponds about deserted brick-yards teem with many individuals of a few species. The Cumberland is the congenial home of river-frequenting species such as *Hetærinas* and *Gomphi*; and in the occasional marshes of the river's great bends a few species not observed elsewhere were taken. The largest one of these marshes which I found is below Nashville, on the farm leased by the State Penitentiary. This marsh is near the middle of the curve in which the farm is situated, and opposite the cliffs locally known as "Buzzard Rocks." In the east end of this marsh, and nowhere else, *Ischnura prognata* was taken. In my notes I have designated this as the Morrow Swamp, from the name of the owner of the farm. North of Nashville, ponds are on either side of the grading which leads up to the road bridge over the Cumberland. Here the first dragonflies of the season of 1901 were observed on March 17. Other ponds are to be found in the Centennial Grounds, Nashville, on a farm adjoining the Centennial Grounds on the east, on the Morrow farm where the old brick-yards were, and about the brick-yards in Fairfield, East Nashville. As records will show, some collecting was done in Cheatham County, along Sycamore Creek, a tributary of the Cumberland, about twenty miles below Nashville. For the opportunity to collect here I am indebted to Major E. C. Lewis, of Nashville, through whose kindness I was able to go to and from Sycamore Creek on his river steamboat; and to Mr. A. P. Jackson, of Sycamore, whose open hospitality I enjoyed while there.

Doubtless about Nashville, during a favorable year, dragonflies are on the wing from March 1 to December 1,—a period of 275 days. My collecting covered only 174 days of this period. I was first in the field September 16, 1900, and for the last time June 16, 1901. Thus the latter three-fourths of June, a very favorable time, and all of July and August, were missed. Of necessity, therefore, my list is doubtless far from a complete one, but, doubtless also, it will, in addition to stating certain records, by these records indicate what might be expected, thus throwing some light on one of the all-neglected faunas environing the "Athens of the South."

1. **Calopteryx maculata.**

Abingdon, Va., August 20, 1901 (C. C. A.); Glendale Park, Nashville, September 27; Cumberland River, November 3, May 16, June 2; Sycamore, June 5; rare, so far as my observations go.

2. **Hetærina americana.**

Cleveland, August 1, 1899, and Tazewell, Clinch River, August 18, 1902,Va.; Mussel Shoals, Ala., November 4, 1901; between Walker's and Needham's Ford's, August 19; Horton's Ford, August 15; Sharp's Ford, August 22; Agee to Affet, August 25, all on Clinch River, Tenn., 1899; Sneedsville, August 16, and Clinton, August 26, Tenn., 1899 (C. C. A.); Springvale, Tenn., September 4, 1900 (C. C. A.). Small stream through Centennial Grounds, Nashville, Tenn., September 25, 29; Cumberland River, September 30, June 2, rare; Sycamore, June 6.

3. **Hetærina tricolor.**

Mussel Shoals, Ala., November 1, 1901; Tazewell, Clinch River, Va., August 18, 1899; Walker's and Needham's Fords, August 19; below Needham's Ford, August 20; Haynes' P. O., August 19; Sharp's Ford, August 21; Agee to Affet, August 25, one pair in coitu; all on Clinch River, Tenn., 1899; Craig's Ford, Powell River, August 22, 1899; Hiawassee River and Dayton, October 9, 1901 (pair in coitu, the ♀ ovipositing); Springvale, August 30, September9, 1900, and Charleston, September, 1901; all in Tennessee, (C. C. A.). Cumberland River, September 28, 29, 30; October 5, 14, 19, 20, 27; November 3; common, pairing on all dates, adults and tenerals taken.

Variation in Color of Wings of Males taken in Tennessee.—Between the light and dark individuals all intermediate conditions are to be found.

Light..—Front wings barely tipped with dark; apex of hind wings beyond pterostigma black. Base of hind wings with colored area extending to about the tenth antecubital; not occupying full width of wing except at extreme base; outer edge of dark area nearly entire.

Dark.—Front wings distinctly tipped with black; apex of hind wings black from basal side of pterostigma. Base of hind wings darker than in the paler individuals, and the colored area more extended; along the anterior portion of the wing reaching the seventeenth antecubital and leaving the outer edge of the dark area very irregular.

4. **Lestes unguiculatus.**

Morrow Swamp and smaller marshes to the east, May 22.

5. **Lestes forcipatus.**

Centennial Grounds, Nashville, September 25; Morrow Swamp and neighboring marshes, May 23, 30, and June 1, 2, 7.

6. **Lestes rectangularis**

Morrow Swamp, May 21.

7. **Lestes inequalis.**

Morrow Swamp, May 30, one ♂.

8 **Argia putrida.**

Tazewell, Clinch River, Va., August 18, 1899; Agee to Affet, Clinch River, August 25, 1899, and Springvale, September 4, 1900, Tenn. (C.C.A.). Cumberland River, September 19, October 5, June 2; Sycamore, June 6.

9. **Argia apicalis.**

St. Paul, Va., August 9, 1899; Agee to Affet, Clinch River, August 25, 1899, pair in coitu, Chattanooga, October 15, 1901, pair in coitu, and Morristown, October 16, 1901, Tenn. (C. C. A.). Cumberland River, September 16, 28, October 5, 19, 20, abundant and pairing on last date.

10. **Argia tibialis.**

Cumberland River, June 2, 4, Sycamore Creek, June 6.

11. **Argia translata.**

(Determined by Dr. Calvert). Cedar Bluff, August 1, 1899; Wytheville, August 17, 1900, one pair in cop., and Cleveland, August 4, 1899, one pair in cop., Va.; Horton's Ford, August 15, and Sneedsville, August 16, 1899, Tenn. (C. C. A.).

12. **Argia sedula.**

Cleveland, August 4, St. Paul, August 9, and Cedar Bluff, August 1, Va.; Sneedsville, August 16, one pair in cop., and Agee to Affet on Clinch River, August 25, Tenn., 1899. (C. C. A.).

13. **Argia violacea.**

Cleveland, August 4, Coeburn, August 7, Cedar Bluff, August 1, and N. Tazewell, July 29, Va., 1899. (C. C. A.). Glendale Park, Nashville, May 31, Cumberland River, June 2, Sycamore Creek, June 5.

14. **Nehalennia posita.**

Centennial Grounds and neighboring ponds, September 25, October 2, 16, 25; Forrow Swamp and old brick-yard ponds on Morrow farm, April 21, 28, 29, May 4, 5, 8, 11, 27, 30, June 1, 2. The teneral female is a light bright blue, where the male is bright green; with age the females become entirely pruinose.

15. **Enallagma civile.**

About ponds in Centennial Grounds and in North Nashville, September 25, October 16, 19, 20, 25, Morrow Farm, October 27, May 14, 23.

16. **Enallagma aspersum.**

About a small temporary pond near Morrow Swamp, May 22, 23; seen only on these two dates, and only about this one small pond,—one of a chain of ponds along the foot of the sharp descent from the upland to the river-bottom.

17. **Enallagma geminatum.**

Morrow Swamp, May 4, 23; June 1, 7.

18. **Enallagma exsulans.**

Cedar Bluff, Va., August 1, 1899; Sneedsville, August 16, and Haynes' P. O., August 19, 1899, on Clinch River, Tenn. (C.C.A.). Richland Creek, Morrow Farm, June 2; Sycamore Creek, June 5.

19. **Enallagma signatum.**

Centennial Grounds, September 25; Morrow Swamp, May 14, 30; June 7.

20. **Enallagma pollutum.**

Morrow Swamp, May 11.

21. **Ischnura verticalis.**

Centennial Grounds and Morrow Farm, April 15, 29; May 4, 5, 23, 30; June 1.

22. **Ischnura prognata.**

Morrow Swamp, May 4, 5, 11, 22, 30. A description of the female, hitherto unknown, follows.

Ischnura prognata ♀.—Length, 38, abdomen 32, hind wing, 21 mm.—Recently emerged. Bright orange, marked with black and bronze; labrum narrowly black on either side, wider basally; suture between clypeus and labrum with a black median spot; suture between frons and clypeus black; vertex bronze, first segment of antennæ pale, ocelli ruby. A straight mid-dorsal thoracic stripe about .5 mm. wide, a distinct spot on the humeral and lateral sutures at base of each wing and an indistinct short stripe on first laterals uture, bronze; below paler orange, feet pale, spines black, last tarsal segment and tarsal hooks black tipped. First abdominal segment indistinctly darker apically; 2 and 3 with dorsal apical rings of bronze, and 3 with a subapical dorsal spot; 4 with a dorsal stripe occupying apical 6-7 of segment, apically abruptly dilated into an urn-shaped spot, sometimes this spot and the dorsal stripe not continuous; from segment 4 the bronze dorsal stripe is continuous, with narrow basal interruptions at each segment, to ⅓ the length of segment 9; remainder of abdomen yellow; sterna narrowly black, reduced to a basal spot on segment 1. Nodal sector of front wing arising normally between the fourth and fifth postcubitals, nearer the fifth; in the hind wing arising between the third and fourth postcubitals; 3 antenodal cells. Spine not present on the apex of the sternum of abdominal segment 8.

Like other *Ischnura* females and those of *Anomalagrion hastatum*, and of *Nehalennia posita*, that of *prognata* becomes pruinose with age.

23. **Anomalagrion hastatum.**

Centennial Grounds, September 25; October 2, 27; Morrow Farm, April 29, May 4, 11, 22; June 1, 6.

24. **Herpetogomphus designatus.**

Rockwood, October 6, 1901; Springvale, September 13, 1901, August 30, 1900, and Morristown, September 17, 1900, Tenn. (C. C. A.). Along the Cumberland, below Nashville, September 19, common, only males seen.

25. **Ophiogomphus rupinsulensis.**

Stone River, near the Cumberland, May 16, 1901, 1 ♂. P. H. Whiting.

26. **Dromogomphus spinosus.**

Sycamore, Tenn., June 5, 1901, a ♀ nymph found on the ground near the water's edge; this emerged the same day, giving me my only record of this species for Tennessee.

27. **Gomphus quadricolor.**

Sycamore, June 5, a single male.

28. **Gomphus hybridus.**

Cumberland River, May 12, 15, 16, 19, 22, 23, 30; June 2, 6, 7; reared, and exuviæ found; no old, worn specimens taken.

29. **Gomphus crassus.**

Cumberland River, May 23, one ♂.

30. **Gomphus vastus.**

Cumberland River, May 19, 23, 30. During May, 1901, the Cumberland was unusually high, falling and rising frequently, with the result that the banks were constantly muddy. As the nymphs of *Gomphus vastus* and *hybridus* crawled up from the water, they were more or less coated with mud. Often the imago emerged before this mud dried, and in other cases the quantity of mud did not interfere with imagination, but many imagos failed to emerge because of it. Fully matured imagos of both these species were never seen by me along the river. They were always found in fields or thin woodland, or along roadways from near the river to half a mile from it.

31. **Gomphus plagiatus.**

Straw Plains, Tenn., September 30, 1900 (C. C A.). Cumberland River, September 19, 30. Never seen away from the river, resting on trees or on bushes, or occasionally on the ground, or flying over the water. All seen were old specimens. Possibly this species, in its early imaginal life (the period when I observed *G. vastus* and *hybridus*), may also leave the river, and possibly the old males of *vastus* and *hybridus* which escape death in the fields and the woods, return to pass their declining hours near their birthplace. But at present the movements of imago Gomphines and the ecological factors involved are unknown.

32. **Gomphus notatus.**

Cumberland River, September 30. As observed the habits are similar to *G. plagiatus*. An exuvia, apparently of this species, was found along the Cumberland June 7.

33. **Gomphus spiniceps.**

Horton's Ford, Tenn., August 14, and Clinch River P. O. August 14, 1899 (C. C. A.).

34. **Lanthus albistylus.**

Sycamore Creek, June 5, one teneral ♀. Perhaps the nymphs described by Hagen (Trans. Am. Ent. Soc., 1885, p. 281) from Gregson's Spring, Ky., may be this species.

35. **Hagenius brevistylus.**

Clinchport, Va., Aug. 13, 1899, a nymph (C. C. A.).

36. **Boyeria vinosa.**

Holston River, Holston County, Va., a nymph; Bridgeport, Ala., October 31, 1901; Springvale, September 5, and White Pine, September 6, 1900, Tenn. (C. C. A.). Roan Station, Tenn., September 3, 1900. Lancaster Thomas (communicated by Dr. Calvert).

37. **Epiæschna heros.**

Reared May 16, June 2, 3, Nashville. Nymphs were all collected in ditches draining marshes on Morrow Farm. It may be of interest to note that, at the time nymphs were collected, a chimney-building crayfish, which Prof. Hay pronounces new, was taken in numbers in the dredging net. No imagos of *heros* other than those I reared were seen by me in Tennessee.

38 **Æschna constricta.**

Springvale, Tenn., September 21, 1901, one ♀, apparently this species (C. C. A.); Roan Station, Tenn., September 3, 1900, one ♂, one ♀, Lancaster Thomas (communicated by Dr. Calvert).

39. **Anax junius.**

Nashville, October 14; North Nashville, March 17; Morrow Swamp, April 29–June 7; many exuviæ gathered and more seen clinging to vegetation in and about Morrow Swamp.

40. **Didymops transversa.**

Cumberland River, May 12, 15; one ♀, not fully matured, came into the basement of Wesley Hall, Vanderbilt University, an hour or two before sunset, May 13, 1901.

41. **Macromia illinoiensis.**

Cleveland, August 1, 4, 1899, Abingdon, August 13, 1901, and Cedar Bluff, August 1, 1899, Va.; Sneedville, August 16, 1899, and Big Creek, Clinch River, Tenn. (C. C. A.). Knoxville, Tenn., de Selys, *Syn. Cord.*, p. 547 (or 110) 1871. Cumberland River, September 30.

42. **Macromia tæniolata.**

Cleveland, Va., August 4, 1899, one ♀ (C. C. A.).

43. **Neurocordulia obsoleta.**

Chattanooga, Tenn., October 23, 1901, a nymph (C. C. A.). Nashville, Tenn., reared May 26, June 2, 7. The nymphs were collected for me by Albert Guess, who found them clinging to his fish-traps when these were drawn from the water. Here, as in the case of *Epiæschna heros*, I should have no Tennessee record of the species had not the nymphs been taken.

44. **Pantala flavescens.**

Along a small stream in the city limits of Nashville, September 25, Centennial Grounds, October 16.

45. **Tramea lacerata.**

Fairfield Brickyards, October 5, Morrow Swamp, May, common.

46. **Tramea abdominalis.**

Fairfield Brickyards, October 5, one ♂, the only one seen.

47. **Tramea onusta.**

Morrow Farm, October 12, 1900, one ♂, P. H. Whiting; Morrow Swamp, May, common.

48. **Tramea carolina.**

Morrow Swamp, May, common.

49. **Perithemis domitia.**
Centennial Grounds, September 25, Morrow Farm and North Nashville, common, May; on June 7, great numbers of exuviæ were seen on leaves of *Nelumbo* in Morrow Swamp.

50. **Sympetrum semicinctum.**
Roan Station, Tenn., September 3, 1900, one ♂, Lancaster Thomas (communicated by Dr. Calvert).

51. **Sympetrum vicinum.**
Old brickyards, Morrow Farm, October 27, two ♂.

52. **Sympetrum albifrons.**
Cumberland River, September 30, one ♀.

53. **Sympetrum corruptum.**
North Nashville, March 17, two seen, one ♂, a bright, fresh specimen, taken; old brickyards, Morrow Farm, March 24, April 29.

54. **Mesothemis simplicicollis.**
Ponds and marshes about Nashville, September 25, October 5, 19 20, May 22—June 7.

55. **Pachydiplax longipennis.**
Morrow Swamp, May 5, 23, 30.

56. **Libellula basalis.**
Morrow Swamp, May 30, June 1.

57. **Libellula auripennis.**
Wheat field, Morrow Farm, June 6, one ♂.

58. **Libellula incesta.**
Morrow Swamp, June 1, one ♂.

59. **Libellula semifasciata.**
Morrow Swamp, April 30, May 22.

60 **Libellula pulchella.**
Roan Station, Tenn., September 3, 1900, Lancaster Thomas (communicated by Dr. Calvert). Vicinity of Nashville, October 5, May 11—June 7.

61. **Plathemis lydia** (**trimaculata** De Geer).
Roan Station, Tenn., September 3, 1900, Lancaster Thomas (communicated by Dr. Calvert). Nashville and vicinity, September 25, October 2, 16, April 28, 30, May 4, 15, 22.

A Morning's Collection at Raleigh, N. C.

BY C. S. BRIMLEY AND FRANKLIN SHERMAN, JR.
Raleigh, N. C.

In the NEWS for April Mr. J. H. Reading of Chicago recites his experience in "A Collecting Trip South." We are sorry to note his misfortune and disappointment, so have determined to give the results of one of our morning jaunts here at Raleigh, as evidence that all southern collecting is not as barren of results as that experienced by Mr. Reading. As we are at present especially interested in working up the Butterflies and Dragonflies of the State, we will only call attention to these features of our morning's work.

It was March 31st, this year, and the tramp lasted from about 9.50 A. M. to 2 P. M. The weather was fair and moderate with light wind. *Pieris rapæ* was abundant flitting over the fields, and on entering a piece of open woods we soon captured two hibernated specimens of *Euvanessa antiopa*, which were quite active and wary in the warm sunshine. Here the Dragonfly *Tetragoneuria cynosura* was abundant and we secured a good series. Among them we found occasional specimens of *semiaquea*. *Papilo ajax* (small spring form) was several times seen making its way hastily through the woodland, only stopping once or twice to draw nectar from the Vaccinium blossoms. The typical yellow form of *P. turnus* was observed at close quarters, and the dark form (*glaucus*) of the female was also observed at a little greater distance. *Terias nicippe* proved not uncommon and several specimens were added to our collection.

Among the Dragonflies, again, the little Agrionid *Nehalennia posita* was common in the marshy places, where we also took *Plathemis lydia*, the first of the season. One or two large Æschnids, probably *Epiæschna heros*, were seen coursing rapidly and irregularly over the meadow and through the open woods. *Gomphæschna furcillata* was likewise observed, as was also *Cordulegaster maculatus*. *Gomphus sordidus* was represented in our catch by two females, and *Didymops transversa* was also taken.

But to return to the Butterflies. Both *Lycæna comyntas* and *L. pseudargiolus* were taken, and these are the only species of the genus which we have yet taken in the State. Along a path we secured a series of *Chrysophanus hyphophlæus* and several *Phyciodes tharos*, while the blossoms of a wild plum tree lured two *Vanessa huntera* to their fate. A small *Colias eurytheme* had been taken and a small *Junonia cœnia* observed, near the same place a week earlier. Dancing through the warm woods we found *Neonympha gemma* in sufficient numbers to be classed as "common." *Eudamus bathyllus* was taken while sunning in the pathway, and on the huckleberry blossoms we took a number of *Thanaos juvenalis* and one specimen of *brizo*. *Anthocharis genutia* ♂ was taken, and a pretty little fellow he is too, with the orange tips to his falcate wings. Several had been taken a week previous. While following what we suspect was a female *Anthocharis* we were suddenly arrested by the appearance of *Thecla damon* on a bush before us, where he sat for a moment chafing his hind wings together after the fashion of Theclas.

Last, and perhaps best of all, those who are accustomed to poorer collecting grounds than ours, would have been delighted to see *Pamphila carolina*. This pretty little skipper, which was described from North Carolina and has never yet been recorded from any other State, was found not at all uncommon near a patch of white violets, and seven specimens fell to our share within a few minutes. As this insect is still unknown to most collectors a brief account of it may not be amiss. The general appearance of the insect when at rest is yellowish, the wings being closely folded together vertically over the back so that only the under surface is visible. They alighted not infrequently on the grass and sprouting leaves close to the ground, and several were also taken when perched on sticks or weed stalks one or two feet high. They are very pugnacious, and were observed to fiercely chase *Phyciodes tharos* and one of the *Lycæna*. One specimen of this species (*P. carolina*) was taken on March 24th, and on April 3rd, ten more were taken. The female, hitherto unknown, was represented among these.

Whatever the collecting may be in other states, we find in North Carolina a happy blending of faunas which makes it a most interesting territory to collect over.* Such collecting as we have here described for the latter part of March is scarcely typical of that season, as this spring has been unusually forward. Normally this experience would be had in mid-April, but we have not "padded" our account in the least, and have specimens at hand, of all species here recorded as captured.

The Eggs of the Psorophora Ciliata.

By H. F. Harris, M. D., Atlanta, Ga.

Although the larval and pupal stages of the *Psorophora ciliata* have been recently described by Prof. Howard, no one, so far as I am aware, has as yet been able to obtain the eggs of this rather uncommon mosquito.

During October of the past year, while studying the relationship of the various members of the family of Culicidæ to malaria, it was my good fortune to obtain a number of eggs from a female *Psorophora ciliata* which was being used in my experiments. The insect from which the eggs were obtained was captured on October 4, 1902, and was allowed to bite a boy suffering from chronic tertian malaria during the succeeding night. The mosquito was then placed in a cage covered by cotton netting, and was supplied with water and a small piece of fresh banana each day. On the morning of October 10th, the insect was found upon the surface of the water, which was contained in a small standing dish, and was apparently unable to get out. On close inspection there were found lying upon the surface of the water numerous, small, oval, dark-colored, objects that were at once recognized as eggs—evidently having been laid by this mosquito which was alone in the cage. These eggs were scattered upon the surface of the water, no two being in contact, and upon examination with a hand lens they appeared to be concavo-convex bodies, the convex surface lying always in contact with the water.

Under the microscope, as well as when viewed by the unaided eye, the eggs appeared almost black. They measured from

0.704–0.759 mm. in length, 0.352–0.385 mm. in breadth, and from 0.240–0.245 mm. in thickness. When viewed with a high power lens they are found to be distinctly convex on one side and slightly concave on the other, and when seen from either of these surfaces they exhibit an almost perfectly oval form. Occasionally at one end there is a slight projection, giving to the egg, when this exists, a contour not unlike that of a pecan. When examined under a comparatively high power of the microscope the surfaces of the eggs are seen to be beset with numerous, transparent, thorn-like projections, all of which usually lie at an acute angle, and all point in the same direction; this angle is one of about 45° as a rule, but the inclination may be greater or less—in some instances being even at right angles with the surface upon which they lie. These projections are from 12–14 μ in length, and from 7–8 μ in width. Their free ends are usually rounded, and present a knob-like appearance in many instances.

The *Psorophora ciliata* that laid these eggs was removed from the water and again placed in the cage where in a very short time the insect entirely recovered.

Prof. Howard states that he has been unable to obtain the eggs of this mosquito, although he has kept them in cages with this object in view for a considerable length of time. I cannot say with certainty as to the cause of my success in this matter, but would suggest the possibility that this may be the result of the insect in this case having had a full meal of blood some five days previous to the time the eggs were deposited. It may be possible that the *Psorophora* must have blood in order that the eggs may properly mature within their bodies.

A New Roach of the Genus Ischnoptera from Florida.

BY JAMES A. G. REHN.

The specimen on which this species is based was referred to me for determination by Mr. C. W. Johnson, who collected it at St. Augustine, Florida. It gives me great pleasure to dedicate this striking species to the collector, as a slight token of personal esteem as a friend and naturalist.

Ischnoptera johnsoni n. sp.

Type: ♂; St. Augustine, St. John County, Florida (C. W. Johnson). [A. N. S., Phila.]

Apparently closest allied to *I. nigricollis* Walker (Catal. Blatt. Brit. Mus., p. 118), but differing in the shorter and darker tegmina, the more reflexed lateral borders of the pronotum and the blackish abdomen. In color this species bears considerable resemblance to *I. linearis* (Serville) from South America, but that is structurally different, and is also a larger insect.

Size small; form elongate and graceful. Head with the interspace between the eyes of moderate width, and about equal to that between the elongate-ovate ocelli; antennæ filiform, slightly pilose, not exceeding the body in length. Pronotum with the disk somewhat flattened, and bearing two shallow postero-lateral, sub-circular depressions; lateral portions of slight depth, but quite sharply deflected; anterior and posterior margins very broadly rotundate, lateral margins straight, the angles broadly rounded. Tegmina rather elongate; basal field narrow, of little extent, sub-coriaceous; marginal field narrow, the costal veins very numerous, closely placed, and extending quite uniformly to the tip of the field; veins of the discoidal field longitudinal; anal field sub-hastate in form, the veins closely and evenly disposed. Wings with the costal veins numerous and closely placed; medio-discoidal space considerably greater than the medio-ulnar; anterior ulnar vein with three complete and five incomplete rami. Abdomen depressed; supra-anal plate narrow, produced, the apex subtruncate, and with a broad, shallow median depression; cerci depressed, attenuate, over twice the length of the supra-anal plate; subgenital plate produced, fornicate, apical styles small. Limbs comparatively slender, the posterior metatarsi over half as long again as the second and third tarsal joints.

General color blackish vinaceous; limbs sienna; ocelli whitish. Pronotum and head blackish; tegmina deep vinaceous, becoming paler toward the extremities; wings slightly suffused with pale vinaceous, strongest apically; the veins of the same color, but of a more solid tint. Upper surface of the abdomen and abdominal appendages blackish vinaceous.

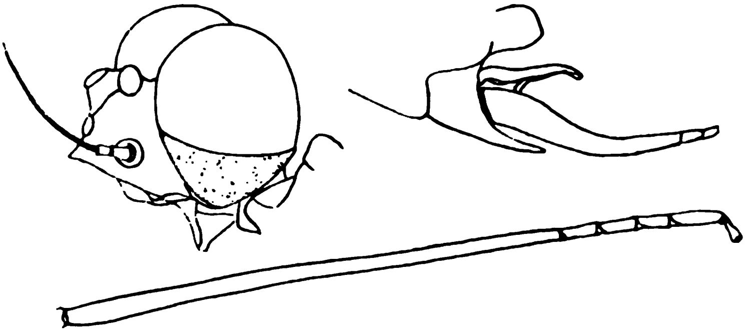
MEASUREMENTS.

Length of body	11.2 mm.
Length of pronotum	3.5 "
Greatest width of pronotum	4.2 "
Length of tegmina (apex damaged)	13 "
Greatest width of tegmina	4.1 "

A New Species of Habrophlebia.

BY NATHAN BANKS.

Habrophlebia is a genus of Mayflies described by Eaton in 1881. Ths species have three setæ in both sexes, and differ from the allied *Ephemerella*, *Leptophlebia* and *Blasturus* in having the hind-wings angulate on the costal margin, and the fore-wings without the short marginal veins. The hind-wings are much narrower and with fewer cross-veins than in *Ephemerella*. In the male the eyes are enlarged and divided as in the allied genera; the eyes of the female are widely separate. The costal cross-veins are few and indistinct.



Habrophlebia americana Banks.

The genus is well represented in Europe, and Eaton in his Revisional Monograph says he has seen an undescribed species from New Hampshire. The one species known to me may be called:

Habrophlebia americana n. sp.

It is dark brown in color, mottled with pale on the sides of the thorax and abdomen; lower part of male eyes dark, upper part pale; legs pale, anterior femora darker, especially at tip; hind femora with a dark band near tip, and a less distinct one near the middle. Wings hyaline; venation pale brown. Fore wings rather narrow; no costal cross veins before the bulla; no short marginal veins; intercalary veins not branched. Hind wings with the costal margin strongly angulate in the middle; few costal cross-veins. Three subequal, annulated setæ, longer than the body; posterior tarsi four-jointed; male claspers pale, three-jointed.

Length, 5 mill.; expanse, 11 mm.

Received from Mr. Edw. Berry, of Passaic, New Jersey, who bred it, and has published a description of the nymph in the *American Naturalist*, 1903, page 26.

Notes on Buprestidae (Coleoptera) with Descriptions of New Species.

BY HENRY SKINNER.

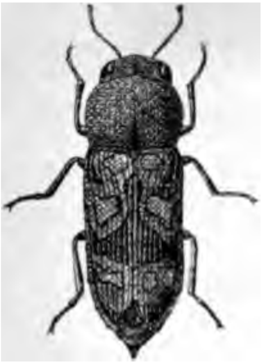
See Plate X.

During the summer we have received some interesting beetles from Arizona containing undescribed species. Among them were two new species of *Tyndaris*. Mr. Henry W. Wenzel was under the impression that there was also some new material in this genus in the U. S. National Museum. Through the courtesy of Mr. E. A. Schwarz, the Honorary Curator of the Coleoptera, I have been permitted to study these specimens. Mr. Schwarz has also most generously placed at my disposal the fine drawings made to illustrate the three new species, *olneyæ*, *prosopis* and *barberi* to which he had given manuscript names. We have but one described species of *Tyndaris* in North America, and that was described under the name of *cincta*, by Dr. G. H. Horn, in 1885, and the type is in the Horn collection, now the property of the American Entomological Society. Kerremans in the Genera Insectorum lists five species in the genus, one of which, *cincta*, is North American, and the other four South American, three being from Chili and one from Parana.

Tyndaris olneyæ n. sp. (Schwarz ms).

Head gray, clothed with silvery pubescence; antennæ black. Thorax gray, also with fine silvery hairs; there is a median depressed line extending from base to apex; finely and densely punctate. Elytra gray, the lateral margin not markedly serrulate as in *cincta*; apices ending in three points; striate, striæ punctured; elytra with silvery pubescence. Underside of body and legs gray with silvery pubescence. There are two orange-yellow spots on each elytron situated at about one-third of the distance from the thorax to the apex of elytron. One is close to the suture but not touching it, and the other on the lateral margin. One specimen examined has but one such spot, the marginal one only being present. This species is smaller and not as robust as *cincta*. Length 7 to 9 mm.

Our specimens were received from Mr. C. R. Biederman, and were taken at Florence, Arizona. Mr. Biederman says of them—"they were in one colony on dead 'cat claw' bushes,



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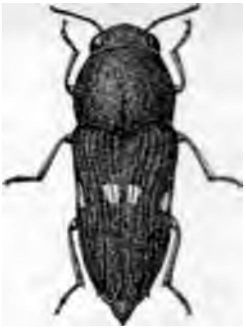

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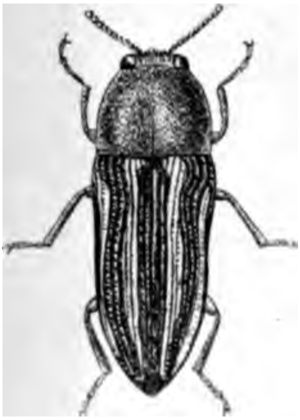

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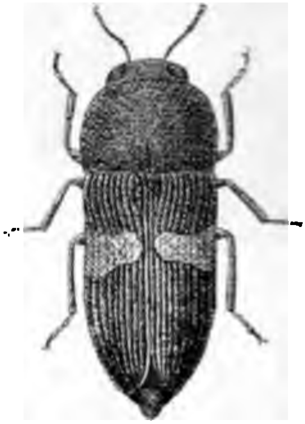

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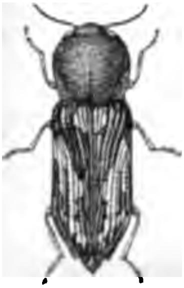

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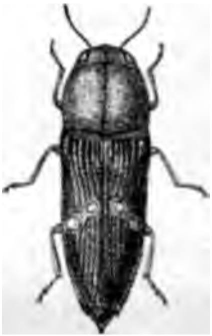

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NEW BUPRESTIDÆ (Skinner).

and came in on June 26th, and vanished about July 10th. Although there are miles of such dead bushes, I only found this one colony, and they were scattered over a large area with never more than one or two on a bush." The specimens collected by Mr. Schwarz were bred from pupæ found in the exposed roots of *Olneya tesota* at Yavapai Hot Springs, Arizona, and bear dates from June 24th to June 26th.

Tyndaris prosopis n. sp (Schwarz ms).

Head bronze brown, shining, moderately pubescent. Thorax shining bronze brown with a marked median depressed line extending from base to apex ; moderately pubescent. Elytra bronze brown, shining, with silvery pubescence ; coarsely striate, intervals and striæ punctate ; nearly midway between the thorax and the apex of elytron is a rather dark orange spot surrounded by a blue circle ; there is a similar spot near the side margin ; these spots are not quite in line, in which they differ from *olneyae*. Length 8 mm.

From one specimen cut from a dead branch of *Prosopis juliflora* by Mr. Schwarz in the immediate vicinity of the famous dam across the Colorado river at Austin, Texas, June 26th. This species at first glance looks very similar to *olneyæ*, but the bronze color, coarser striæ and character and position of the spots serve to readily distinguish it. It is a handsome and interesting species.

Tyndaris chamæleonis n. sp.

Thorax bronze brown, rather moderately punctate. Elytra with punctate striæ not so coarse and irregular as in *prosopis*; what little of the ground color that shows is very dark shining green ; one orange yellow spot in angle made by junction with thorax and elytral suture ; one orange-yellow spot with a linear extension to the margin from upper edge, and one from lower edge, the latter not approaching the margin ; these spots are in the centre of the elytron There are two additional spots at lower third, the outer one reaching the margin ; in one specimen these spots and the upper ones also are geminate ; all are surrounded by dark blue as in *prosopis*. This species lacks the linear median thoracic depression so marked in the former species ; the apices of the wings are more rounded and striæ more regular. Length 6.5 to 8.5.

Described from two specimens very kindly submitted to me for study by Mr. Charles Schæffer of the Brooklyn Institute. One specimen bears label, New Braunfels, Comal Co., Texas, collection Ottomar Dietz, and the other Esperanza Ranch, Brownsville, Texas, July, on flowers of mesquite, collection Brooklyn Institute.

Tyndaris barberi n. sp. (Schwarz ms).

Head and thorax gray with a bronzy reflection, clothed with silvery pubescence. Elytra black, striate and punctate, the striations finer than in the previous two species; there are two sordid white or yellowish spots on the elytra nearly reaching the thoracic suture and elytral sutures; connected with these at the lower edge are two linear spots which reach the thoracic suture; extending from these to near the apex of the elytron are two linear spots (or lines) almost reaching the elytral apex, the ground color showing through in three places, the central one being open laterally. The legs and underside of the body are gray black. Length 5 mm.

Described from three specimens, two of which were taken on dead "cat claw" at Florence, Arizona, June 28th, by C. R. Biederman. Diligent search failed to reveal more specimens. One specimen taken at Hot Springs, Arizona, June 28th, by Mr. H. S. Barber. At the request of Mr. Schwarz, I have named this after his assistant who captured the species and who has done such good work collecting in the west. It was found on an unknown shrub. This little species is very conspicuous with its yellowish maculation. The three species above described are characteristic of the genus, being of rather robust form, cylindrical and narrowed posteriorly, as in *Acmaeodera*. Mr. Schwarz also sent me two Chilian species, *marginella* and *gayi* Chevrolat, the latter being a synonym of *planata* Castelnau and Gory. *Marginella* is a large black species, being 12.5 mm. long. It has a yellow spot on either side of the thorax, and the upper two thirds of the external margin of the elytron is yellowish. *Planata* (*gayi*) is dark blue, with two oblique orange spots on each elytron; an orange line on the upper third of the elytral margin, and a small orange spot on the elytral margin in line with the lower oblique spot. Length 7 to 11 mm. The following brief characterizations may be useful in separating them from North American species that may subsequently be found. The five North American species may be separated as follows:

Large black species with a median cream colored fascia . . . . . **cincta.**
Gray species with four dark orange spots . . . . **olneya.**
Bronzy species with four dark orange spots surrounded with blue. **prosopis.**

Small species with yellow maculations and lines . . . . **barberi.**
Maculate species. 8 orange maculations surrounded with blue. **chamæleonis.**

Acmæodera biedermani n. sp.

Head, shining bronze brown clothed with long silvery pubescence, and moderately coarse punctuations. Elytra dark shining blue, striate and punctate; a yellow line extends from the thoracic juncture to the apex, wide at beginning, then narrowing, wider near the middle and ending in a point near apex; this line is parallel to but not reaching suture. A similar line, but narrower, runs parallel to the margin, beginning near thoracic juncture and ending in a point. It is shorter than the other line, and does not extend to the apex. Underside very hirsute, hairs sordid white. Length 10 mm.

Described from one specimen taken at Florence, Arizona, May 8th, 1903, by C. R. Biederman, who is a most excellent and enthusiastic collector. This species is a very distinct and handsome one. It looks like a giant edition of the *quadrivittata* of Horn. We have received from Mr. Biederman a large series of *A. delumbis*, Horn, from Florence, Arizona, vi, 28, 03. They present very considerable variation. *Delumbis* was described from two specimens from Arizona, no exact locality being given. Mr. Fall* places this as a synonymn of *gibbula* Lec.

EXPLANATION OF PLATE.

Fig. 1 Tyndaris chamæleonis.
Fig. 2 Acmæodera biedermani.
Fig. 3 Tyndaris barberi.
Fig. 4 Tyndaris olneyæ.
Fig. 5 Tyndaris cincta.
Fig. 6 Tyndaris prosopis.

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A QUESTION IN REGARD TO LABELLING.—The rural free delivery mail system is playing havoc with my labelling. I had specimens from "Galveston N. C.," but now it is "Durham R. F. D. No. 2," although Durham is nine miles distant. Now, how can we designate such localities so that the labelling will be permanent and satisfactory? "Durham R. F. D. No. 2" may cover a territory of fifty square miles; "Galveston" is no more; and what am I to do? This is not an exceptional case, for these delivery routes are invading all parts of my State, and as my collections are from various localities, it begins to look as if I will get in a pickle. Will some one favor me with a suggestion?

FRANKLIN SHERMAN, JR.
Dept. Agr., Raleigh, N. C.

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* Jour. N. Y. Ent. Soc. vii. i. 99.

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and, as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form, will be given free, when they are wanted; and this should be so stated on the MS., along with the number desired. The receipt of all papers will be acknowledged.—ED.

PHILADELPHIA, PA., SEPTEMBER, 1903.

While it is true that the literature of entomology comprises somewhere between forty and fifty per cent. of all zoology, it appears there is not enough work done to do justice to the subject, as the number of species is relatively so much larger as compared with zoology in other branches. We need more workers in every order to revise and monograph species, genera and families. Systematic work comes first, as we must classify objects in nature to utilize them when it comes to biology, economy, etc. Every working entomologist knows of groups of species that should be put in better shape, and wishes that the work could be done. This applies to all orders. While the interest in entomology has taken great strides, we still see the necessity of more students to put the work on a still firmer foundation. In the Coleoptera for instance there are many genera and families needing revision, and in this order we are also badly in need of a reference list giving also the distribution. In the Lepidoptera we need a revision of the genera *Thecla* and *Lycæna*, and particularly all the Hesperidæ. The other orders are as badly off, and it is to be hoped that more people will take up the work and subdivide the labor, as there is room for all. We need more good popular works to interest those persons who may eventually become entomologists. A popular work on the Coleoptera is very badly needed, but it will be an enormous undertaking for any one person. We also need more students of the life-history of insects. The interest is growing, but the subject is vast.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

SAY! If a fly gives birth to a little fly, is the sister to the mother of the little fly an ant?

"WHAT'S the matter?" asked the centipede. "The doctor tells me I have one foot in the grave," replied the worm. "Oh, I wouldn't let a little thing like that worry me," said the centipede.

NEW NAME FOR *Dictyopteryx* Pictet.—The name of this very distinct genus of Perlidæ is preoccupied by *Dictyopteryx* Stephens, Catalogue, 1829. Pictet first published the name in 1841. Therefore, I propose for the Perlid genus the name *Perlodes*.—NATHAN BANKS.

THE plates of Sphingidæ, by Calverley, Weidemeyer and Edwards, which were for sale by the American Entomological Society, have all been sold. If any one wants this work, he can obtain a set of the plates from the Brooklyn Institute of Arts and Sciences and the letter-press from the American Entomological Society.

Troctes needhami and *T. bicolor* Enderlein, recently described in the Zool. Jahrbücher, Abth. f. Syst., xviii, 360, 1903, are synonyms of *Troctes niger* and *T. bicolor* described by me in the ENTOM. NEWS, 1900, pp. 559, 560. All the types come from Virginia, and the fact that Enderlein called one of his species *T. bicolor* would indicate that he does not examine the *Zool. Record* very carefully.—NATHAN BANKS.

Miscodera arctica Payk.—While collecting at Mt. Ktaadn, Me., last summer, during the latter part of August, I collected a specimen of *Miscodera arctica* Payk. near the base of the mountain, at an elevation of 3000 feet. The specimen has been identified for me by Mr. C. Schaeffer, of the Brooklyn Museum. Mr. Samuel Henshaw writes me that he has records of its capture in Northern Michigan, Alaska and New Foundland.—H. G. BARBER.

ALEYRODES (TRIALEURODES) VITRINELLUS Ckll.—This is a new species found abundantly (with much black fungus) on the under side of what appear to be orange leaves from the garden of Nezahualcoyotl, Tezcuco, Mexico, I have sent a description to Prof. A. L. Herrera, who sent me the specimens, but as the Mexican publications do not circulate so widely as the NEWS, it is worth while to indicate here that it is a species closely allied to *A. floridensis*, but with the pupa larger (about 900 μ. long), without any dark markings, and with the fringe of glass-like rods coarser and somewhat longer. There is no dorsal secretion. The vasiform orifice is broad-cordiform, with the apical notch very faint; the operculum is very broad, not at all pointed. The adult is yellow.—T. D. A. COCKERELL.

An Inquiry.—Does anyone know of the existence of Odonata of the subfamily Cordulinæ (Selys) in Mexico or Central America? I have not seen a single individual purporting to come from the countries named, excepting one male of *Somatochlora lepida* Selys, in the collection of the Academy of Natural Sciences of Philadelphia, labeled "Mex." The history of this individual is unknown, and I had long ago added the label "Locality Mexico probably erroneous."—Philip P. Calvert.

Mr. Charles Dury, of Cincinnati, Ohio, spent forty-eight days collecting at Brownsville, Texas. "I found insects (except fleas and ticks) rather scarce and, though I worked very hard, those expected tropical forms failed to appear in the Lepidoptera. Though I secured many species that are strangers to me, they are such plain-looking little things that they have no tropical appearance at all. In the Coleoptera a few tropical genera rewarded very careful search. Diptera and Hymenoptera were scarce and but few in species. I left there May 20th, and concluded that I was too early and that June would have been better."

SHE AND THE KISSING BUG.

She was an ancient maiden;
  She told her friends that she
Was only twenty-seven,
  But her age was forty-three.

A kissing bug attacked her;
  Her breast was filled with glee.
"At last," she cried, "there's something
  That has a taste for me!"—*Newspaper*.

Doings of Societies.

A meeting of the Feldman Collecting Social was held May 20th at the residence of H. W. Wenzel, 1523 S. 13th street, Philadelphia. Eleven persons were present.

Prof. Smith stated all the collections had been saved from the recent fire at Rutger's College, although the laboratory buildings were destroyed. He also reported that about the middle of May reports came in from a number of locations in New Jersey that the maple leaves were being eaten off at the base by insects. This happened for two or three nights, and upon investigation he found that it was caused by the species of *Lachnosterna*.

Mr. Boerner reported *Sphæridium scarabæoides* from the Philadelphia Neck, May 10th.

Mr. Hoyer exhibited three specimens of *Cychrus elevatus* from Laurel Springs, N. J., May 17th.

Dr. Skinner exhibited a species of *Tegrodera* from the Gila River, Arizona, May 4th. It seemed to be very distinct from the forms in the collections here.

Mr. Laurent exhibited a series of the under side of the posterior wings of *Eunica tatila* from Miami, Florida, showing variations. W. R. REINICK, *Secretary Pro tem.*

A meeting of the Entomological Society of Western Pennsylvania was held at Carnegie Museum, Pittsburg, Pa., on Saturday Eve, July 11th, Geo. T. Krautwurm taking the Chair in absence of President W. J. Holland. Mr. Engel made remarks on *Bembecia marginata*, he having found the larvæ and pupæ in stems of blackberry and raspberry. Remarks were also made by other members on different species of Sesiidæ.

A meeting was also held on August 1st, H. G. Klages acting as President. Eleven members present. The Annual Field Day was selected to be held at Squaw Run, Pa., on Aug. 9th, and all members invited to attend.

F. W. FRIDAY, *Secretary.*

A meeting of the Entomological Section of Chicago Academy of Sciences (Chicago Ent. Society), was held in the John Crerar Library, Thursday evening, May 21, 1903.

Nine members present. Visitor, Mr. Dennis, of Chicago University. Mr. Longley in the Chair.

After the transaction of the regular business, Mr. Healy took the floor for the discussion on *Satyrus alope*. He spoke particularly of its marked variation from east to west, and the tendency to become larger and lighter the further west it ranged, resembling many other species in this respect. His series of the species, which was exhibited, helped to illustrate this point.

Mr. Healy spoke also of the effect which climate and food plant can produce in variation. JOHN COMSTOCK,
Recorder.

At the meeting of the Feldman Collecting Social, held June 17th, at the residence of Mr. H. W. Wenzel, 1523 South 13th street, Philadelphia, fourteen persons were present.

Dr. Castle spoke of his recent collecting trip in Florida. Insect traps took many species, including *Silpha carolina*. Many specimens of *Phanæus igneus* were captured on excrement. At Jupiter Inlet *Staphylinus comes* and *Caridium Le Contei* were taken several inches in the sand. *Notolomus bicolor* was abundant, as was also *Cryptocephalus aulicus*. The weather was cool, the previous winter having been very wet. Carabidæ were rare. A species of *Galerita* encountered, bombarded like the species of *Brachynus*. The *B. alternans* and *Galerita* were usually found associating.

Mr. Laurent stated that on the average about 200 young emerge from each egg-mass of the mantis, *Tenodera sinensis*.

Mr. A. Hoyer exhibited some Coleoptera from Delaware County, Pennsylvania.

In connection with these Mr. Wenzel called attention to *Liopus parvus*, which seems to be common this season, though heretofore it had been quite scarce. Also *Gaurotes cyanipennis*, which seems to be more plentiful than usual. In fact, Coleoptera in general were unusually abundant this season. He reported that three specimens of *Phymatodes æneus* were taken at Anglesea, N. J., last season, and this year twelve specimens. In the lot only one specimen was maculated. Only the unique type of this species had previously existed in collections.

Mr. Reinick exhibited an artificial beetle, a very good imitation of a species of *Lucanus*.

Mr. Laurent reported that a specimen of *Lucanus elephas* had been taken recently at Anglesea, N. J.

On motion a vote of thanks was given Prof. Smith for his kindness in entertaining the society at the last meeting.

WILLIAM J. FOX, *Secretary*.

We regret to say that Mr. F. D. Twogood, a subscriber to the NEWS for a number of years and a well known collector in California, died at Riverside, March 23, 1903.

EXCHANGES.

Not Exceeding Three Lines Free to Subscribers.

☞ These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and only when necessary those at the top (being longest in) are discontinued.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of species to be limited to twenty-five for each sending; 2d, the sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly; 4th, All insects must be mounted. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2-cent stamp with all insects for return of names. **Please put date of capture and exact locality on each specimen.** Before sending insects for identification, read page 41, Vol. III. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Exchanges solicited in moths, butterflies of N. America. Catocalas preferred. Send lists to Jos. H. Reading, 775 N. Rockwell St., Chicago, Illinois.

Lepidoptera from all parts of the world to exchange for species not in my collection.—Frank Haimbach, No. 1309 Allegheny Avenue, Philadelphia, Pa., U. S. A

Lepidoptera.—Fertile eggs of *Argynnis diana* wanted —John Ruston, 10 Carlton Road, Workrop, Nottingamshire, England.

North American Butterflies wanted in exchange for Lepidoptera of Southern California.—P. H. Hart, Pasadena, Cal.

Butterflies for exchange. Expect to have limited number of *Œneis chryxus*, *P. smintheus*, *Basilarchia wiedemeyeri* and others during summer. Send lists of what you have.—A M. Hendee, Central City, Colo.

Will collect in all orders. Would like named or unnamed Coleoptera in exchange Please write to G. Chagnon, P. O. Box 186 Montreal, Can.

Moths of Pennsylvania and New Jersey. The undersigned will give good exchange in cash or specimens for moths of Pennsylvania and New Jersey that are new to his collection. Send list of rare species only.—Philip Laurent, 31 East Mt. Airy Ave , Philadelphia, Pa.

Wanted.—Sphegidæ of North America, Mexico and the West Indies (as included in Cresson's Synopsis) for study in connection with a revision of the group. Material sent will be returned named as far as possible.—H. T. Fernald, Amherst, Mass

I will give Lepidoptera, publications or cash, for Smith's "Monograph of the Sphingids," published in Vol. xv, Trans. Ent. Soc., Acad. Nat. Sciences, 1888.—H. H. Newcomb, 35 Court St., Boston.

Hymenoptera.—Will be pleased to send duplicates in return for identifications.—Charles Stevenson, 906 St. Urbain Street, Montreal, Canada.

Wanted for cash, fertile ova of *regalis*, *imperialis*, *Triptogon modesta*, *Angulifera*.—H. M. Peinze, Northboro, Mass.

Will collect in all orders, insects of South East New England for Lepidoptera of North America.—L. W. Tilden, Box 54, New Bedford, Mass.

Wanted.—Fertile eggs. *Cith. regalis*, also all kinds *Thecla* and *Lycaena* for Lepidoptera from here.—H. M. Boyer, 220 Hudson Street, Reading, Pa.

Wanted.—Life histories in all orders of insects. Will pay cash or give exchange for same. Write what you have, and state lowest cash price.—Denton Bros., Wellesley, Mass.

Desirable Lepidoptera for exchange. Would like to receive lists of good species.—John Comstock, 1572 Ridge Ave., Evanston, Ill.

I will collect Lepidoptera, Coleoptera, Hymenoptera, Hemiptera of this locality, in exchange for Diurnal Ledidoptera of the United States, or named Diurnals of foreign countries. Write at once.—M. E. Hoag, D. D. S., Oakville, Iowa, U. S. A.

I will give Lepidoptera, publications or cash for Smith's "Monograph of the Sphingids," published in Vol. xv, Trans. Ent. Soc., 1888.—H. H. Newcomb, 35 Court Street, Boston.

Parnidæ.—Parnidæ of the world wanted. Will pay cash or give exchange. (Correspondence French, German or English).—William D. Richardson, Fredericksburg, Virginia.

Wanted.—ENT. NEWS, vol. viii, No. 6.—Louis H. Joutel, 164 E. 117th Street, New York City.

Arctians.—Living eggs or larvæ of any North American moths of the genus *Apantesis* wanted for purposes of studying preparatory stages. Will be glad to render help, if possible, as to wants of anyone assisting. Arthur Gibson, Cent Exp. Farm, Ottawa, Can.

N. A. Lepidoptera desired. Those willing to collect, in exchange for European specimens, please communicate with James McDunnough, care Wilson, 385 Gt. Western Rd., Glascow, Scot.

Lepidoptera.—I have *Paonias astylus, Chalænogramma jasminearum, Sphinx kalmiæ, plebeius* and other Sphingidæ of the Atlantic States for exchange for specimens not in my collection. Send lists.—Prof. Henry Wormsbacher, 122 Hutton St., Jersey City, N. J.

For Exchange.—Several thousand Colorado and Utah Lepidoptera in papers and pinned on small black pins. Will trade for a Winchester repeating take-down shot gun in perfect condition.—Arthur J. Snyder, Belvidere, Illinois.

I have some very fine and rare exotic and native Lepidoptera to exchange for native pupæ and cocoons. Will also take Catocala and Sphinx on pins or in papers. Send small lists to Charles F. Timm, 131 Ralph St., Brooklyn, N. Y

Wanted Cicindela scutellaris, pulchra, sexguttata, purpurea, formosa, latesignata, fulgida, and vulgaris (any varieties), in as large number as possible. Coleoptera from northern Ill. and Ind.; Wood's Hole, Mass., and Elmira, N. Y., for exchange. Will collect as directed from the fauna of northern Ill.—V. E. Shelford, 5715 Drexel Ave., Chicago, Ill.

I wish to exchange American and European Lepidoptera and Coleoptera for American insects for the season of 1903 I am also a preparator of larvæ —Karl Haertel, 198 California St., Newton Mass.

Coleoptera.—Paleoxenus Dohrnii Horn exchanged for Elaterids and Buprestids of the U. S. not yet represented in my cabinet.—A. Fenyes, M.D., Pasadena, Cal.

Wanted—for cash—Transactions Am. Entom. Society, Vols. I.-XXVI.; Proc. Entom. Soc. Phila., Vols. I.-IV.; Entomologica Americana, Vol. IV.; Entomological News, Vols. I.-VI., XI., XII.; Canadian Entomologist, Vols. I.-XXXIII.; Riley's Missouri Reports; Fitch's New York Reports; Leconte & Horn's Rhyncophora; works and papers on Aphidæ. Send lists of any other standard entomological works.—E. Dwight Sanderson, College Station, Tex.

I have Beetles, Butterflies, Moths, Catocalæ, spread or in papers, from Illinois, to exchange for U. S. and exotics, or pupæ and cocoons.—A. Mares, 1671 W. 23rd St., Chicago, Ill.

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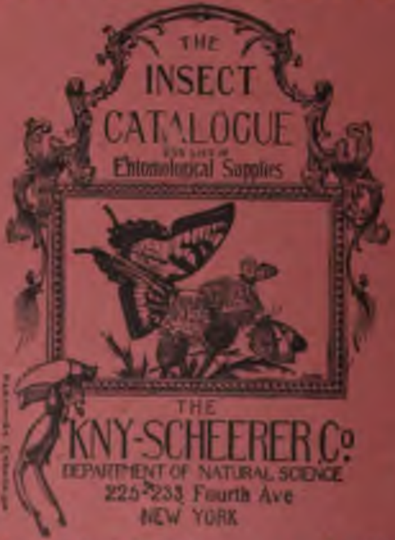

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Heteronotus vulnerans.

OCTOBER, 1903.

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Will correspondents kindly note that I have left Oxford and that in future my address will be as above.

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DR. GARRY DE N. HOUGH.

ENTOMOLOGICAL NEWS
AND
PROCEEDINGS OF THE ENTOMOLOGICAL SECTION
ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XIV. OCTOBER, 1903. No. 8.

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Garry de N. Hough, M.D.

BY J. M. ALDRICH.

The subject of the present sketch is happily alive and in the vigorous activity of middle life; but as his growing medical practice has driven him to the abandonment of entomology, and he has sold his collection and library, it seems a fitting time to call attention to the work he accomplished on the Diptera.

Garry deN. Hough was born in 1861. In his boyhood he collected and bred butterflies and moths, keeping at this until he entered Harvard Universiy in 1877. At Harvard he was a frequent visitor to the entomological collections kept by Dr. Hagen. He graduated in 1881, *cum laude*, and with honors in chemistry. He graduated from Bellevue Hospital Medical College in 1884, and remained a year as interne in the surgical service. He then settled in New Bedford, Mass., where he still resides.

Dr. Hough's attention was first drawn to the Diptera in 1894, when he began to study the species affecting corpses, his duties as public examiner having suggested to him the possibility of determining, in a body found in the woods, the length of time since death by the condition and species of Diptera inhabiting the remains. This gradually led him into a study of the Muscidæ (*sensu stricto*), and especially the Calliphorinæ, which were at that time in a chaotic condition in this country. Dr. Hough at once seized the problem in a characteristic manner, by procuring from the best European authorities a large collection of the European Muscidæ, accurately named, at the same time acquiring large quantities of North American material. Bringing the two faunas together he almost at a stroke settled the question of the identity of our species, or their non-identity, and thus succeeded in a very short time, by following the correct method, in placing our commoner Muscidæ on a sound basis of classification.

Along with this, he had been acquiring European and American Anthomyidæ, but here he followed a different method suited to the greater difficulty of the subject. After borrowing several American collections to put with his own very large one, he sent the whole to P. Stein, Genthin, Prussia, one of the leading students of the family. Stein published an extensive paper on the species sent him (Berl. Ent. Zeitsch., XLII, 161–288), in which he described many new species, and, what was of even greater importance recognized a considerable number of European forms. This paper really lays the foundation of a classification of the North American Anthomyidæ. Still further, Stein became so much interested in the North American members of the family that he spent several weeks in London, at a later time, studying the types of Walker's Anthomyidæ, and published a full report on them (Zeitsch. f. Hym. u. Dipterologie, 1961, 185–221). These two papers cover the family so well that, with some of the European literature for genera and for species common to the two continents, the student is well prepared to work on the family.

Dr. Hough amassed a collection and library very rapidly. He was a liberal purchaser of books and flies. His named European Diptera amounted to over 1200 species some time before he sold the collection. In his later work, he confined himself to the Calyptrate and Acalyptrate Muscidæ; but not until he had published a revision of the Pipunculidæ of the United States. With the exception of this paper, his publications have been only on the Calyptratæ.

Finding himself compelled to give up entomology in favor of his profession, Dr. Hough recently sold his collections and library at a nominal price to the University of Chicago. By this event, dipterology loses a worker characterized in a marked degree by energy, accuracy and individuality. His methods were his own, and were direct and scientific. Their only end was the advancement of dipterology ; hence his most extensive piece of work was really done by Stein, although Hough was directly responsible for its inception. In going back to the European species for the foundation of his work, Hough pursued the only possible course for the Calliphorinæ, since many of ours are the same ; and in every family, there is need of constant watchfulness to recognize in our fauna the described European species. The only correct way to identify them is by comparison with carefully determined European specimens.

Dr. Hough turned over with his library one unpublished paper, a lengthy one on the Sarcophagidæ, which it is hoped will be published by the University of Chicago. His published papers are the following :

1898. Two New N. A. Species of Cynomyia. Ent. News, IX, 105-111.
A Third American Species of Cynomyia. Ent. News. IX, 165-166.
The Muscidæ Collected by Dr. A. Donaldson Smith in Somali Land. Proc. Acad. Nat. Sci. Phil , 165-187. This contains a careful exposition of the chætotaxy of the Muscidæ, which Dr. Hough considers one of his principal contributions to entomology.
Sarcophaga hunteri, n. sp. Kans. Univ. Quarterly, VII, 207-210, figs.
1899. Some N. A genera of Calliphorinæ Girschner. Ent. News, X, 62-66.
Some Muscinæ of North America. Biological Bull., I, 19-33, figs.
Studies in Diptera Cyclorhapha. I. The Pipunculidæ of the United States. Proc. Boston Soc. Nat. Hist., XXIX, 77-88.
Synopsis of the Calliphorinæ of the United States. Zool. Bull., II, 283-290, figs.
1900. South American Muscidæ in the Collection of S. W. Williston. Kans. Univ Quart , Sec. A, IX, 203-232, 2 pl.
Notes on some European species of Calliphorinæ in the Collection of the Hungarian National Museum. Termész. Füzetek, XXIII, 248-250.

The accompanying portrait is very characteristic, and seems to the writer to express the character of his subject better than a lengthy description. One can read in it the energetic, earnest character of Dr. Hough; and there is a suggestion also of warmth and geniality; but there is not any indication of lack of interest in the great panorama of modern life. It is impossible to think that Dr. Hough will not occasionally find time to read the entomological journals; and it is dollars to doughnuts that he will tell the younger fellows in a few years, as Dr. Williston recently said of himself, "The happiest days of my life were when I was working on the Diptera."

A New Aphid on Thistle.

By T. D. A. Cockerell.

Aphis ochrocentri n. sp.

Apterous ♀.—About 3 mm. long, stout, pyriform; head, thorax and most of under parts pale pink; abdomen brownish plumbeous, delicately pruinose, more or less shining on disc; two segments anterior to cauda pale green; cauda short and slender, black or nearly so; femora with basal half yellowish-white, apical half black; tibiæ and tarsi, antennæ and (slender) nectaries black: antennæ, folded backward, falling short of bases of nectaries by a distance equal to about half length of nectaries (in younger forms they extend a little beyond bases of nectaries); nectaries over twice length of cauda; cauda about as long as hind tarsi; beak extending considerably beyond hind coxæ. Larva pink.

Winged ♀.—2½ mm. long. Similar but darker; bases of wings delicate pale green. In the following description the measurements are all in micromillimeters. Antennal joints: (1) 100, (2) 90, (3) 600, (4) 380, (5) 360, (6) 150, (6a.) 660; third joint with extremely prominent sensoria, over 25 above and below; fourth with about six sensoria, on under side. Beak very long, reaching abdomen; length about 1400, its terminal joint 350; cauda about 200, slender; nectaries rugose-tessellate, 500 long, 60 in diameter, not at all swollen in middle; hind tarsi (with claw) about 230. Antennæ not as long as body.

Hab.—Pecos, New Mexico (alt. prox. 6700 ft.), July 13, 1903, abundant on *Carduus ochrocentrus* (Gray). Allied to *A. cardui*, but quite distinct.

On Aug. 9, I took *Macrosiphum erigeronensis* (*Siphonophora erigeronensis* Thos., 1878) on *Erigeron subtrinervis* at Pecos, N. M. The species is new to New Mexico.

A Group of Diurnal Mutillidae (Hymenoptera).

By H. L. Viereck.

In the classification of the Mutillidæ of N. America, Fox has divided the old genus *Mutilla* into several species-groups; analogues of these divisions have been treated as subgenera by Andre; finally they have been given generic rank by Ashmead. For the sake of convenience, the scheme of the last-named author is deemed desirable.

The Photopsiinæ, distinguished in the ♂ by the large, crooked mandibles, are separable into Diurnals with very small ocelli and Nocturnals having large ocelli, the difference in the development of the ocelli depending upon their special function. For a group of Diurnals with the mesosternum produced into a process on each side of a median furrow, is proposed the name *Photomorphus*. The other Diurnals, with no mesosternal processes, are members of the species-group *pennsylvanicus* of Fox. The farthest east for any species of the Nocturnals is Alabama.

Photomorphus Johnsoni n. g. n. sp.

♂. Length 8 mm. HEAD *quadrate, covered with shallow punctures, contiguous on the anterior half,* i. e., *anterior to a line drawn from posterior margin of eyes across in front of the anterior ocellus; separated, though not much, on the posterior half. Space between posterior ocelli a little greater than one-half the distance between them and nearest eye margin. Ocelli forming a triangle nearly equilateral. First joint of flagellum distinctly shorter than the second, though not as much as one-half shorter. Mandibles gently curved, the inferior margin excised, the emargination causing a prominent angle.* Pubescence on the head white around the border and on the appendages, darkened on the front.

THORAX.—The anterior lateral margin of prothorax *bounded by a ridge. Punctures of pronotum shallow, not distinct, contiguous* or *nearly. Punctures of propleura more separated* and *distinct.* Punctuation of mesonotum stronger, *i. e.*, sharper, than on pronotum. Parapsidal grooves distinct, extending almost to the anterior margin, the grooves between these and the tegulæ not so distinct, shorter. *Scutellum with indistinct sculpture, rugose, dull. Mesopleura with an oblique impression directed forward and downward; above this impression or groove the surface is flat, shining, smooth, and bears a few distinct punctures; below the surface is bulged, covered with coarse, contiguous, ill-defined punctures.*

The mesosternum, on each side of the median furrow, is gradually produced into a short, truncate, heavy process, somewhat dentate, directed downward and slightly forward. Metathorax coarsely but not sharply reticulated, the spaces large. *From the superior lateral corner of the metathorax to the insertion of the petiole extends a slightly outcurved, ill-defined ridge, separating the reticulated part of metanotum from an anterior lateral flat portion, which is divided by a shallow groove running parallel with the ridge just mentioned;* the space between has sparse punctures on it; *the space anterior to this furrow (largely smooth and shining) terminates in a broad, scooped-out, polished depression, which separates the mesopleura from the metapleura.* The enclosed space on the metanotum is oblong, about twice as long as wide, longitudinally bisected by a distinct ridge, and bounded by ridges, the spaces smooth and shining. Dorsum of thorax with darkened hair similar every way to that on top of head, the rest of the thorax with white pubescence. *Legs slender, first and second joints of tarsi as long or nearly as tibiæ; claws simple, with a short pulvillus between.* Wing with the *first submarginal cell in its greatest length twice its height, distinctly shorter and smaller than the second submarginal cell. Cubitus almost straight, not angled at the insertion of the first transverse cubitus. Secoud transverse cubitus received in the middle of the marginal cell or nearly.*

ABDOMEN.—*Petiole in its greatest width little more than one half width of second segment, strongly convex, shining,* with shallow and rather large punctures, well separated. *Second abdominal segment polished, punctate,* the punctures smaller and wider apart than on the petiole. *The felt line or impression near the lateral margin of second dorsal segment about one-half as long as the segment, the line on second ventral segment shorter. The margin of the second segment and the rest of the segments, closely irregularly punctured, dullish. First segment with thin, rather sparse, whitish pubescence; second dorsal segment almost bare.* The margin of second dorsal and all of the other dorsal segments with an abundance of darkened hair. *Ventral segments with sparse white pubescence, most abundant on the margin.* Sixth ventral segment flat, spatulate, shining and smooth, six punctures semicircularly arranged near base the margin of this segment bordered with punctures, close together. A little tubercle protruding between the fifth and sixth segments.

COLOR.—In greater part sort of a dark ferruginous. A spot between ocelli, mandibles, antennæ, legs, abdomen except petiole black or nearly. Wings darkened, particularly down from the stigma, which is black, radial cell darkest, nervures very dark.

Type, Coll. Acad. Nat. Sci. Phila.
Type locality, Riverton, Burlington Co., New Jersey.
One ♂ vii, 7, 1901 (C. W. Johnson).

Photomorphus alogus n. sp.

Characters in *johnsoni* duplicated in this species are in italics in the description of the former. Most of these characters will prove to be generic.

♂. Length, 7 mm. HEAD.—All the pubescence of head white.

THORAX.—The angle formed by the posterior border and the ridge of propleura broader than in *johnsoni*, where it is an acute angle, here almost a right angle. The posterior margin of pronotum distinctly curved in, the pronotum antero-posteriorly in the middle, therefore distinctly narrower than laterally; in *johnsoni* this is much broader, nearly as broad as the pronotum laterally. The triangular space is impunctate in both species, except for two or three shallow punctures. Punctuation of mesonotum more nearly like that of pronotum. Parapsidal grooves not deep, running no further than half way anteriorly. The lateral impressed line merely a shining streak. The mesosternum produced into a longitudinal ridge on each side of the median furrow. This ridge is serrate, the three posterior teeth more distinct and longer than the anterior ones. In *johnsoni* the spaces of metathorax are rather well defined and comparatively regularly hexagonal or circular; in this species they are poorly defined, irregular, shallow. The smooth space on metapleura is smoother than in *johnsoni*, with only three or four punctures. Enclosed space on metanotum almost a circular area, the enclosing ridge broken posteriorly, the surface within dullish. Pubescence of dorsum slightly darkened, brownish, the rest white. Second transverse cubitus received by the marginal cell a little before the middle.

ABDOMEN.—Punctures of petiole large, very well separated. Punctures of second abdominal segment not much smaller than those on the petiole, but closer together. Segments beyond the second with pale or white hair. Sixth ventral segment concave spade shape, *i. e.*, pointed in the middle posteriorly, broadest across the middle; the surface shining, very finely pitted or indistinctly punctured.

COLOR.—Head and thorax pale ferruginous inclining to testaceous; first, second third, and greater part of fourth segments more ferruginous than head and thorax. Appendages of head, legs and parts of abdomen not yet mentioned very dark brown to black. Wings almost uniformly brownish, nervures pale, stigma brown.

Type, Coll. Am. Ent, Soc. Phila.
Type locality, Tifton, Georgia.
One ♂.

* * *

THE NEWS is not published during July or August. Ten numbers a year come out, numbered consecutively, June being No. 6 and September No. 7.—EDS.

The Feeding Habits of the Larva of Anthocharis genutia.

By Herman Hornig, Philadelphia.

With the first days in May, when Spring calls flowers and insects into active life, the Mouse ear cress, *Sisymbrium thaliana* stands ready to receive its few callers. Its modest appearance is usually overlooked by the High School Girl botanizing, who is more charmed by sweet smelling Pinks and Crowfoot violets often growing side by side with *thaliana*. One of its life duties is to be the sustenance of our orange tip butterfly, *Anthocharis genutia*. It is around its blossoms that the pretty little pairs get acquainted and the courting begins. The female selects a leaf, stem or cluster of flowers to deposit the orange-colored egg, and spends the remaining days sipping here and there from the little white flowers.

Each little axillary bud which *thaliana* sends forth has the appearance and color of the newly-laid egg to deceive the seeker for the new inhabitant. One of the duties of *genutia* is the fertilization of the flower which grows into a long slender seedpod, usually carrying a tiny.sepal along, like a little flag, till it is finally lost. The newly hatched *genutia* walks along till a slender stem is reached, at whose end is the seedpod, "the spread table," and the first meal is taken. By some unobserved means the larva also carries a speck of substance on its back, and as the feeding commences at the stem end of the pod and the larva mooves into the space it has made by eating, the detection of the little animal by the collector is most difficult, as the colors of the pod and worm are exactly the same. This applies only to the first stages, as later on the dimensions of the larva, its dark back and underside somewhat alter the circumstances. The pupa is of peculiar shape and found on the bark of trees and stones. One of the great enemies of the larva is a little black spider which has a few threads of silk attached from the blossoms to the end of the seedpods.

Eggs of *genutia* are seldom found in numbers on one plant. As a rule there is only one egg on a plant, although two have been collected on large, healthy specimens, abundant for miles around Westville, N. J.

A Few Captures Made at Miami, Florida.

BY MORGAN HEBARD.

While in Miami, between January 28th and February 8th, I did a great deal of collecting, and took a great number of Lepidoptera. The following are some of the most interesting captures I made: 2 *Thecla telea* ♂ and ♀, 1 *Thecla martialis*, 1 *Thecla acis*, 3 *Eresia frisia*, 1 *Colænis julia*, 2 *Catopsilia statira*, 2 *Anosia berenice* var. *strigosa*, 1 *Epargyreus zestos* and a number of *Anæa portia*, *Eunica tatila*, *Timetes eleucha* and *Erycides amyntas*. On the flowers at dusk I also captured 4 *Dilophonota caicus*, 2 *Dilophonota edwardsi*, 3 *Dilophonota obscura*, 2 *Dilophonota ello*, 2 *Pergesa thorates*, 8 *Cautethia grotei*, 4 *Pachylia ficus* and many *Enyo lugubris* and *Chærocampa tersa*.

On favorable evenings the collecting is splendid, but in my whole stay there, there were hardly three favorable evenings, and this I learn is about the average, for if there is the slightest drop in temperature, or if there is a breeze, these moths can not be found. The most interesting among the Coleoptera which I took was: 1 *Lypsimena californica*, hitherto only known from California, and 8 *Languria marginipennis*, which species was common there on flowers in the woods.

A Hybrid Dragonfly of the Genus Gomphus (Odonata.)

BY E. B. WILLIAMSON.

(Plate XII.)

Among a number of *Gomphi* collected near Bluffton, Indiana, June 8, 1902, by my father and myself, is a male which in general appearance more resembles *sordidus* than any other species, though the appendages are more like *graslinellus*. The colors are duller and the color patterns less defined than in *graslinellus*, but brighter and sharper than in the obscure and variable *sordidus*. On the same day, in the neighborhood where this male was taken, *Gomphus crassus*, *G. fraternus*, *G. graslinellus*, *G. sordidus* and *G. exilis* were on the wing. This male was taken near a small gravel pit associated with *G. graslinellus* and *G. sordidus*. About this gravel pit *Gomphi* are rare as compared with the numbers to be found along the river two or three hundred yards distant. The gravel pit is separated from the river by woodland, and while this male may have left the river to come to the gravel pit, the chances are that it passed its nymphal life in the pit. Both *graslinellus* and *sordidus* are on the wing at the same time so, structures permitting, copulation might take place between a male of one species and a female of the other. The isolation of the gravel pit with its few *Gomphi* might permit of such a mesalliance, utterly impossible along the river with its agressive competition demanding the instant and perfect adjustment of all structures concerned in the two sexes.

While this male is distinct from any species known to me (I do not know *Gomphus lividus*), I prefer to regard it as a hybrid for both a negative and a positive reason. Were it a representative of a distinct species more than one specimen should be known. Its habits must be similar to *graslinellus* and *sordidus*, neither of which species is difficult to find in regions where they occur. With the collecting that has been done in Ohio, Michigan, Indiana and Illinois, more than one specimen should have been captured. As a positive reason I have the fact that the specimen has characters fairly intermediate between *graslinellus* and *sordidus*—two true physiological species. So far as I know no hybrid dragonfly has hitherto been described (See Calvert, Ent. News, March, 1901; p. 68, footnote), and I rather hesitate to place *Gomphus* along with such genera as *Quercus* of the botanists, and *Anas* of the ornithologists, though hybridization might possibly be more expected here than in any other genus of dragonflies in North America.* Hybrid lepidoptera from breeding cages are known, but I do not know whether any such hybrids occur naturally. J. L. Graf, D. A. Atkinson and myself took *Chrysophanus hypophlæas* and *Phyciodes nycteis* in copulation near Pittsburg.

A comparison of three males, taken in the same locality, representing *Gomphus sordidus*, *G. sordidus* × *graslinellus* and *G. graslinellus* is furnished by the descriptions given below and by the plate of figures accompanying this article.

[* For references to pairing of different species of Odonata, see Trans. Am. Ent. Soc., xx, p. 188 at top, and Ent. News, iv, p. 268.—P. P. C.]

	G. sordidus.	*G. sordidus* × *graslinellus.*	*G. graslinellus.*
Length of abdomen	37 mm.	37 mm	37 mm.
Length of hind wing	30 mm.	29 mm.	30 mm.
Color of labium	Olive green	Yellow, obscure	Blackish
Color of labrum	Olive green	Olive green	Green
Color of anteclypeus	Olive green	Plumbeous	Green
Color of postclypeus and frons in front.	Olive green	Olive green	Green
Color of frons dorsally	Olive green, brown at base, the pattern not sharply defined.	Olive green, brown at base, indistinctly bilobed between the antennæ.	Green, brown at base, distinctly bilobed between the antennæ.
Color of vertex	Brown	Brown	Dark brown, a pale spot back of each lateral ocellus.
Color of occiput	Olive green	Olive green	Green
Shape of occipital crest	Convex, higher than in the other two specimens	Convex, low, slightly higher than in *graslinellus*, very slightly emarginate at middle	Convex, low
Color of rear of head	Yellow, similar to the hybrid, more obscured with reddish brown	Yellowish green, obscured with dark brown; above near the occiput black	Black, a large yellow spot below and externally on each side; between this large spot and the occiput a small yellow spot.

	G. sordidus.	*G. sordidus* × *graslinellus.*	*G. graslinellus.*
Color of prothorax	Dark reddish brown, anterior margin yellow; middle lobe with an olive green geminate spot; in front of and on either side of the geminate spot a small round spot; a larger obscure spot on either side placed behind and below the small round spot	Brown, front and hind margins yellow; the geminate spot of *sordidus* divided into two adjacent spots, otherwise as in *sordidus*	Black, anterior margin yellow; middle lobe with geminate spot, a small one just back of the geminate spot and a larger one in front near the anterior margin; two spots on either side of middle lobe as in *sordidus*, but distinct
Color of mesothorax	Olive green, stripes light reddish brown; mid-dorsal stripe widened below, humeral and antehumeral continuous, except for a short narrow space, first and second lateral stripes fused above, suture between metepimeron and metasternum largely brown	Green, stripes light reddish brown; middorsal stripe slightly wider below, humeral and antehumeral less joined than in *graslinellus*, humeral and first lateral stripe not joined below, second lateral stripe not forked below, suture between metepimeron and metasternum with some brown	Green, stripes dark reddish brown; middorsal stripe diverging below to meet the antehumeral, humeral and antehumeral narrowly joined above and below, first lateral stripe narrowly joining the humeral below, second stripe complete, forked below, suture between metepimeron and metasternum green
Color of feet	Reddish brown, tibiæ with a superior pale stripe reaching to the tarsus	Dark reddish brown, anterior femora paler beneath, tibial pale markings intermediate in extent between *graslinellus* and *sordidus*	Black, first femora greenish beneath, tibial pale superior stripes not reaching the tarsus
Color of first abdominal segment.	Like *graslinellus*, but more obscured, little differentiation between general color and lateral stripes	Like *graslinellus*, but paler and obscured	Green, a superior lateral black stripe

	G. sordidus.	*G. sordidus* × *graslinellus.*	*G. graslinellus.*
Color of second abdominal segment	Same as first segment, stripes joined above apically leaving the pale area trilobed, stripes reddish brown, shading insensibly below into green	Like *graslinellus*, but paler; abdominal markings throughout paler than in *graslinellus*	Like *sordidus*, but not obscured, colors brighter and pattern distinct
Color of third abdominal segment	Reddish brown, greenish at base below, greenish above, narrowed posteriorly	Similar to *sordidus*, but colors black and yellow	Like preceding
Color of segments four to six	Dark reddish brown, each segment with a narrow dorsal stripe disappearing posteriorly and a small lateral rounded basal spot, greenish	Like preceding, but colors black and yellow, and pattern more sharply defined	Like preceding
Color of segment seven	Similar to segment six, but dorsal stripe reduced to a triangular basal spot	Dorsal stripe reduced as in *sordidus*, sides below indistinctly yellowish	Similar to segment six
Color of segment eight	Same as seven, with a mere trace of paler markings below on sides	Reddish brown, same as seven, but with the sides below yellow, the yellow area slightly more restricted than in *graslinellus* and the pattern obscure	Dorsal stripe reduced to a line, except at base, sides below yellow, yellow area half as wide as black area above it, pattern distinct
Color of segment nine	Greenish above, sides obscured yellowish or greenish, mottled and indistinct, darkest near the greenish dorsal area.	Similar to *graslinellus*, with the lateral stripes reddish brown, and about half as wide as black stripes in *graslinellus*, color pattern not quite as sharp as in *graslinellus*	Yellow, a black stripe on either side above, this black stripe about the same width as the yellow stripes on either side of it.
Color of segment ten	Indistinct brownish olive green, with a dorsal spot darker than the surrounding area	Pale reddish brown, similar in pattern to *graslinellus*, with the yellow more extended	Black, dorsum with a small oval yellow spot and a yellow spot below on either side
Color of appendages	Dull dark brown	Dark reddish brown, paler basally	Black

In shape and general color the abdomen of the hybrid at a glance more resembles *sordidus*, but closer study indicates a greater resemblance to *graslinellus*. In the color of the last segments, however, especially 7, 8 and 9, the extensive and indefinite obscuring of the pale area in *sordidus* conceals a resemblance of this species with the hybrid which can only be appreciated by a study of the specimens.

EXPLANATION OF PLATE XII.

Figs 1, 2 and 3.—Dorsal and lateral views of abdominal appendages, and lateral view of accessory genitalia of second abdominal segment, of male *Gomphus sordidus*, Bluffton, Ind.. June 15, '02.

Figs. 4, 5 and 6—Same of male *Gomphus sordidus* X *G. graslinellus*, Bluffton, Ind., June 8, '02.

Figs. 7, 8 and 9.—Same of male *Gomphus graslinellus*, Bluffton, Ind., June 15, '02.

* * *

Description of a New Genus of Gryllidae with a Note on the Genus Aphonogryllus.

By James A. G. Rehn.

The new genus described below represents a very peculiar type apparently closest allied to *Anaxipha*, but the characters of the male tambourine are very different from those found in the latter genus.

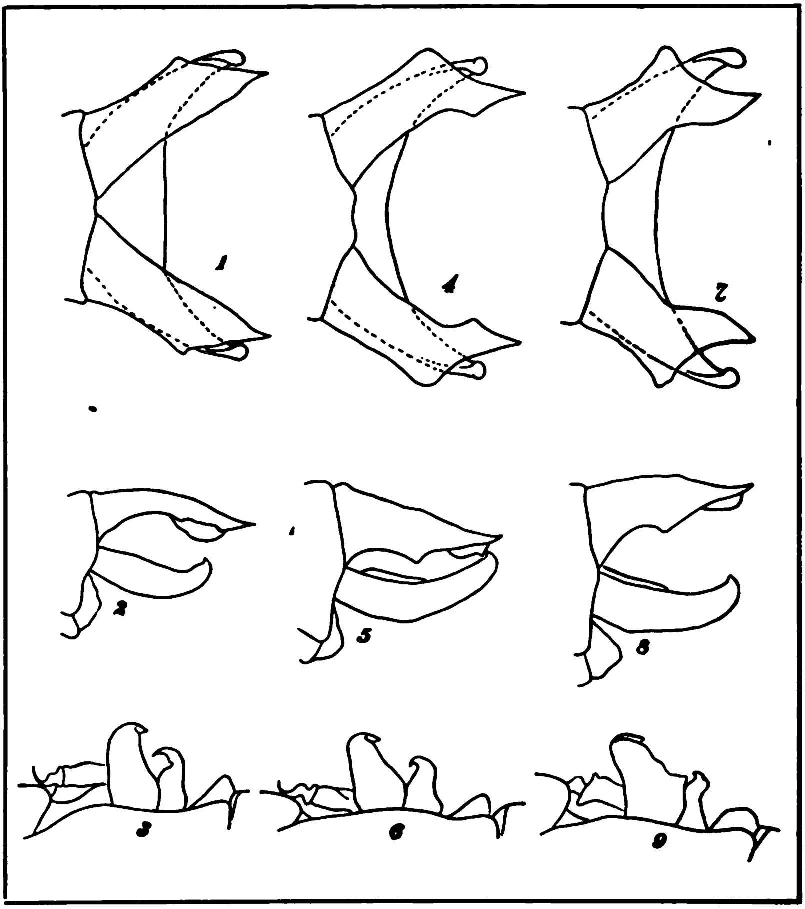
FALCICULA n. gen.

Allied to *Anaxipha* Saussure (Miss. Scientif. Mexiq., p. 370), but differing in the structure of the musical apparatus of the male. This is considerably reduced in size, compressed, and with an entirely different disposition of the veins. The ovipositor of the female also differs in being unarmed.

Falcicula hebardi n. sp.

Types: ♂ ♀; Thomasville, Thomas County, Georgia. April 17 and 25, 1903. Collected by Mr. Morgan Hebard. [Acad. Nat. Sciences, Phila.].

♂. Size small; form robust. Head with the vertex declivent; eyes moderately prominent, irregularly ovoid; interantennal space considerably produced; terminal joint of the palpi elongate triangular; antennæ filiform; interocular space with two series of longitudinally disposed



1-3 GOMPHUS SORDIDUS, 4-6 G. SORDIDUS x GRASLINELLUS,
7-9 G. GRASLINELLUS.

bristles. Pronotum transverse, the width equal to one and one-half times the length ; anterior and posterior margins truncate ; lateral lobes with the lower section bent inwards ; surface of the pronotum with stout bristles similar to those on the head. Tegmina not reaching to the apex of the subgenital plate ; apex truncate with the angles rounded ; dorsal and lateral fields not sharply defined ; lateral field with four simple longitudinally disposed veins ; dorsal field with the median and discoidal veins parallel, rather obliquely disposed ; stridulatory vein short, transverse, the anal node sending off two axillary veins, one of which follows the general trend of the stridulatory vein and bifurcates ; post-axillary veins two in number, subparallel, reaching to the apex of the tegmina ; ulnar (diagonal) vein diagonal, but slightly sinuate, and fusing with the median vein before the apex ; anal vein branching from the ulnar vein shortly beyond the node and extending a distance not exceeding half the length of the tegmina. no distinct speculum being developed; one complete oblique vein present, flanked on each side by an unattached and incomplete parallel vein, all of which are almost longitudinally disposed. Cerci elongate, tapering, reaching to the apex of the posterior femora. Subgenital plate moderately produced, scoop-like. Anterior and median femora moderately stout ; anterior tibiæ each without a visible tympanum. Posterior femora strongly inflated, tapering ; tibiæ slender, with three spines on each upper margin, excluding the apical spines.

♀. Antennæ almost twice as long as the body. Tegmina with the veins regularly and longitudinally disposed, very simple in character and undivided. Cerci exceeding the ovipositor in length. Ovipositor heavy, strongly curved, the apex not dentate and with the superior margin slightly excised. Subgenital plate channelled to receive the ovipositor, but not scoop-like as in the male.

General color pale wood brown, the tegmina yellowish brown, head and pronotum longitudinally lined with yellowish, eyes dark brown.

MEASUREMENTS.

	♂.	♀.
Length of body	4 mm.	5 mm.
Length of pronotum	1.2 "	1.3 "
Width of pronotum	1.5 "	1.5 "
Length of tegmina	2.5 "	2.5 "
Length of posterior femora	3.2 "	3.2 "
Length of ovipositor		1.5 " .

APHONOGRYLLUS.

In 1901 (Canad. Entom., XXXIII, p. 272), I proposed the name *Aphonogryllus* to replace the name *Aphonus* Saussure, which latter I found to be preoccupied by *Aphonus* Leconte. Recently I discovered the fact that the name *Aphonogryllus* had been used before I proposed it to replace Saussure's name.

Perkins, in 1899, in the Orthoptera section of the Fauna Hawaiiensis (Vol. II, pt. I, p. 26) proposed the same generic term, which of course precludes it from use in another connection. To replace *Aphonus* Saussure and *Aphonogryllus* Rehn (not of Perkins), I propose *Aphonomorphus*.

Notes on the Collecting Around Thomasville, Georgia.

By Morgan Hebard.

The collecting about Thomasville, Georgia, is very similar to that of Northern Florida, as Thomasville is situated in the extreme southern portion of the State.

The surrounding country is flat, but not marshy, and is covered with open pine forests. These forests are everywhere seamed by streams which flow through gulches completely filled with Magnolias, Bays, Beeches, Tulip Trees, and choked with a dense growth of blackberry, grape and other vines. This is the opposite to what is found in the pine woods where there is scarcely any undergrowth higher than the grasses and huckleberry bushes. There are occasionally large tracts of scrub oak or beech, but the pine forest predominates. Among those oak "hammocks" I have found *Thanaos somnus*, *Thanaos nævius* and *Thanaos petronius* in company with the ever present *Thanaos juvenalis*, *Thorybes bathyllus* and *Thorybes pylades*. This locality for *Thanaos somnus* and *Thanaos nævius* is of special interest, as these species have never before been taken outside of Florida. There I have also found the *Thecla halesus*.

In April, 1900, I found, to my great surprise, *Anæa portia* in one spot in the pine woods; they were there quite abundant, but so shy as to be almost unapproachable. I saw them there between April 9th and 22nd. On the first date they were all fresh and evidently newly emerged, but on the 22nd the only specimen I saw was in quite poor condition. As this species has never before been found north of the Southernmost part of Florida, I was very much surprised and pleased to find it in Georgia.

Papilio palamedes appear about the 10th of March, and are quite common along the streams for about a month. The *Papilio turnus* are considerably larger than those found in the North, and all the females I have thus far taken have been of the melanic variety. I saw two *Apatura alicia* closely in December, but was unable to capture either one of them; both were in poor condition. I find the *Libythea bachmanni* moderately common on the wild plum during the few days it is in bloom, which is usually about the last of February, but at other times this species is very scarce.

A list of the Rhopalocera which are scarce in Thomasville between December and May (which is the time I am usually in Thomasville) would indicate the following:

Euptoieta claudia (common later on)
Lycaena comyntas " " "
Calephelis caenius " " "
Anosia berenice
Anaea portia
Libythea bachmanni
Vanessa antiopa
Vanessa cardui
Pieris protodice

Limenitis astyanax
Thecla halesus
Thanaos somnus
Thanaos naevius
Apatura alicia
Lerema accius
Limenitis disippus?
Achalarus lycidas

I collected Heterocera at light this spring for the first time in Georgia, and a few of the more desirable were: 2 ♀ *Xyleutes robiniæ*; 2 *Citheronia sepulcralis*; 3 *Lagoa pyxidifera*; 1 *Parorgyia leucophaea*; *Apatela occidentalis*; *Hypsoropha monilis*; *Hypsoropha hormos*; *Chloridea virescens* and *Actinotia ramosula*.

This year I tried general collecting for the first time with good success, having had special luck among the Orthoptera, all of which Mr. Rehn has very kindly identified for me. I also took Coleoptera, only a few of which have as yet been identified.

Some of the interesting specimens are: 1 *Deltochilum gibbosum*, 3 *Phanaeus igneus*, 3 *Geotrupes retusus*, 1 *Geotrupes egeriei*, 2 *Hoplia trifasciata*, 2 *Silpha surinamensis*, 1 *Trichius viridulus*, 3 *Mallodon dasystomus*, 1 *Prionus imbricollis* and four of the scarce *Pomphopœa polita* which I took at the arc lights. The specimens from other groups are all as yet unidentified.

A List of Insects Taken in the Adirondack Mountains, N. Y.—III.

By Alex. D. MacGillivray and C. O. Houghton.

PHALANGIDEA.*

Liobunum ventricosum *Wood.*

ARANEIDA.*

DRASSIDÆ.

Prosthesima atra *Hentz.*

DICTYNIDÆ.

Dictyna sublata *Htz.*
" foliacea *Htz.*

THERIDIIDÆ.

Theridium spirale *Em.*
Linyphia marginata *Koch.*
Hypselistes florens *Camb.*

EPEIRIDÆ.

Plectana stellata *Htz.*
Epeira prompta *Htz.*
" displicata *Htz.*
" strix *Htz.*
" trivitta *Keys.*
Singa variabillis *Em.*
Tetragnatha extensa *Linn.*

THOMISIDÆ.

Xysticus triguttatus *Keys.*
Misumena vatia *Clerk.*
Tibellus oblongus *Walck.*
Philodromus aureolus *Walck.*
" rufus *Walck.*

LYCOSIDÆ.

Lycosa pratensis *Em.*
Pardosa lapidicina *Em.*
Pirata insularis *Em*
Dolomedes tenebrosus *Htz.*

ATTIDÆ.

Phidippus mystaceus *Htz.*
Philæus militaris *Htz.*
Dendryphantes octavus *Htz.*
" elegans *Htz.*
Ergone leucophæa *Koch.*
Habrocestum cæcatum *Htz.*

ACARINA.

Trombidium sericeum *Say.*

EPHEMERIDA.

EPHEMERIDÆ.

Siphlurus miris *Eaton.*
" sp. near alternatus.
Leptophlebia præpedita *Eaton.*
Ephemerella excrucians *Walsh.*
" ? subimago of crucians.

ODONATA.

CALOPTERYGIDÆ.

Calopteryx maculata *Beauv.*
" apicalis *Burm.*
" amata *Hagen.*

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* In the following list, the Phalangidea, Araneida, Acarina, Ephemerida, Plecoptera, Chrysopidæ and Trichoptera were named by Nathan Banks; the Orthoptera by A. P. Morse; Odonata by J. G. Needham; the Hemiptera by E. P. Van Duzee; the butterflies in part by Dr. Henry Skinner; the Microlepidoptera by W. G. Dietz, and the remainder by the writers

AGRIONIDÆ.

Argia putrida *Hag.*
" violacea *Hag.*
Ischnura verticalis *Say.*
Enallagma hageni *Walsh.*

GOMPHIDÆ.

Gomphus brevis *Hag.*
" spicatus *Selys.*
" exilis *Selys.*

CORDULEGASTERIDÆ.

Cordulegaster maculatus *Selys.*

CORDULIIDÆ.

Tetragoneuria semiaquea *Burm.*

LIBELLULIDÆ.

Celithemis elisa *Hag.*
Ladona julia *Uhl.*
Libellula pulchella *Drury.*

PLECOPTERA.

PERLIDÆ.

Perla postica *Walk.*
Nemoura completa *Walk.*
Leuctra sp.

ORTHOPTERA.

ACRIDIDÆ.

Melanoplus fasciatus *Barnst.*
Chortophaga viridifasciata *De G.*
form infuscata.
form virginiana.
Tettix ornatus *Say.*
hancocki *Morse.*

HEMIPTERA.

SALDIDÆ.

Salda deplanata *Uhl.*
" pallipes *Fab.*
" sp.

HYDROBATIDÆ.

Hygrotrechus remigis *Say.*

NABIDÆ.

Coriscus subcoleoptratus *Kirby.*
" inscriptus *Kirby.*

ARADIIDÆ.

Aradus abbas *Bergr.*

TINGITIDÆ.

Physatochila plexa *Say.*

ACANTHIIDÆ.

Anthocoris musculus *Say.*
Triphleps insidiosus *Say.*

CAPSIDÆ.

Lygus pratensis *Lin.*
Camptobrochis nebulosis *Uhl.*
Leptoterna dolobrata.
Labops hesperius.
Trigonotylus ruficornis *Fall.*
Dicyphus famelicus *Uhl.*
Miris affinis *Reut.*

LYGÆIDÆ.

Lygæus kalmi *Stal.*
Nysius angustatus *Uhl.*
Peliopelta abbreviata *Uhl.*
Ischnorhynchus resedæ *Panz.*

COREIDÆ.

Corizus nigristernum *Sign.*
" novæboracensis *Sign.*

PENTATOMIDÆ.

Euchistus fissilis *Uhl.*
" tristigmus *Say.*
Podisus maculiventris *Say.*
" serieventris *Uhl.*
" modestus *Dall.*
Acanthosoma cruciata *Say.*
lateralis *Say.*
Cymus claviculus *Hahn.*
Cœnius delius *Say.*
Cosmopepla carnifex *Fab.*
Mormidea undata *Say.*

FULGORIDÆ.

Liburnia lutulenta *Van D.*
Laccocera vittipennis *Van D.*

BYTHOSCOPIDÆ.

Bythoscopus pruni *Prov.*
Agallia 4-punctata *Prov.*
" novella *Say.*
Pediopsis trimaculata *Fitch.*

JASSIDÆ.

Deltocephalus configuratus *Uhl.*
" melsheimeri *Fitch.*
Athysanus extrusus *Van D.*
Cicadula 6-notata *Fall.*
Gnathodus punctatus *Thunb.*
Athysanella acuticauda *Baker.*

TETTIGONIDÆ.

Oncometopia costalis *Fab.*
Diedrocephala mollipes *Say.*
Tettigonia gothica *Sign.*

CERCOPIDÆ.

Lepyronia 4-angularis *Say.*

MEMBRACIDÆ.

Stictocephala lutea *Walk.*

PSYLLIDÆ.

Trioza tripunctata *Fitch.*
Psylla sp.

NEUROPTERA.

SIALIDÆ.

Sialis infumata *Newm.*
Chauliodes serricornis *Say.*
" rastricornis *Ramb.*

CHRYSOPIDÆ.

Chrysopa oculata *Say.*
" chlorophana *Burm.*
" chi *Fitch.*
" ypsilon *Fitch.*

MECOPTERA.

PANORPIDÆ.

Panorpa venosa *Westw.*
" latipennis *Hine.*
" maculosa *Bks.*

TRICHOPTERA.

PHRYGANIDÆ.

Phryganea vestita *Walk.*
" cinerea *Walk.*
Neuronia semifasciata *Say.*
" sp.

LIMNEPHILIDÆ.

Limnephilus indivisus *Walk.*
" ornatus *Bks.*
" americanus *Bks.*
Goniotaulus dispectus *Walk.*

LEPTOCERIDÆ.

Mystacides nigra *Lin.*

HYDROPSYCHIDÆ.

Polycentropus confusus *Hag.*

LEPIDOPTERA.

NYMPHALIDÆ.

Danais archippus *Fab.*
Argynnis myrina *Cram.*
Phyciodes tharos *Dru.*
" nycteis *D.-H.*
Melitæa harrisii *Scud.*
Vanessa antiopa *Lin.*
Limenitis disipus *Gdt.*
Neonympha eurytris *Fab.*

LYCÆNIDÆ.

Feniseca tarquinius *Fab.*
Lycæna pseudargiolus *B.-L.*
Chrysophanus hypophlæus *Bdv.*

PIERIDÆ.

Pieris napi *Esp.*
" rapæ *Lin.*
Colias philodice *Gdt.*

PAPILIONIDÆ.

Papilio turnus *Lin.*

HESPERIDÆ.

Pamphila peckius *Kirby.*
" sassacus *Harr.*
" mystic *Scud.*
" hobomok *Harr.*
" " pocohontas *Scud.*
" cernes *Scud.*
Amblyscirtes samoset *Scud.*
Nisoniades icelius *Lint.*

SPHINGIDÆ.

* Hemaris diffinis *Bdv.*
" thysbe *Fab.*
Paonias excæcatus *S.-A.*

ARCTIIDÆ.

Spilosoma virginica *Fab.*

SATURNIIDÆ.

Actias luna *Lin*

LIPARIDÆ.

Clisiocampa disstria *Hbn.*

NOCTUIDÆ.

Acroncyta americana *Harr.*
Parallelia bistriaris *Hbn.*

PYRAUSTIDÆ.

Evergestis straminalis *Hbn.*
Hydrocampa australis *Hulst.*

PTEROPHORIDÆ.

Platyptilia carduidactyla *Riley.*

TORTRICIDÆ.

Ptycoloma persicana *Fitch.*

CONCHYLIDÆ.

Conchylis argentilimitana *Rob.*
" sp.

GRAPHOLITHIDÆ.

Exartema fasciatana *Clem.*
Pædisca sp.
Phoxopteris nubeculana *Clem.*
" burgessiana *Zell.*

GELECHIDÆ.

Stenoma schlægeri *Zell.*
Gelechia absconditella *Walk.*
" vagella *Walk.*
Dasycera nonstrigella *Cham.*

Hunting Empids.

By Annie Trumbull Slosson.

It is chiefly the recent renaissance in this family of flies which leads me to think that a few field notes concerning them may be of some interest. Messrs. Coquillett and Melander have each monographed the North American Empids within the last few years, and both have described many new species in the group, and not a few genera. Dr. Wheeler has also done much work in this family, both by himself alone, and also in collaboration with Mr. Melander.

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* Both species of *Hemaris* occured commonly, resting on the upper surface of the leaves of the bracken fern, *Pteris aquilina*. They rested so quietly that they could be picked up with the fingers.

Those who devote themselves wholly to one order and have paid no attention to the diptera (I have the greatest admiration for these specialists, I myself, being only a smatterer, knowing a very little about many things, but nothing thoroughly,) may not recognize these flies by name, but I am sure they have seen and noticed them while collecting in their own line. They are most of them, of plain, subdued, quiet hues, chiefly blackish or grayish, and never very large, but the odd little round globular head, big eyes and long beaklike proboscis, together with the prominent, round shouldered thorax, slim body and long legs, make them quaintly noticeable. Then they have ways of their own which are very characteristic and peculiar. Predaceous, capturers, killers and eaters of other insects, using their stiletto-like beaks for piercing the tender bodies of their victims, they are, however, many of them flower lovers and sippers of honeyed sweets.

Here in Franconia, N. H., one of the earliest and most abundant species is *Rhamphomyia pulla*, a large, shining black fly, its black slender legs varied with reddish brown. This year in late May and early June, they were very numerous, particularly the males. I could not sweep my net on the herbage at the edge of brook or river without finding them, four, sometimes a half dozen of this species inside it. They crawled upon the gravelly bank of the streams, rested on the wet stones, and often came into our rooms and upon the windows. Windows are great hunting grounds for the collection of Empids, in this northern region at least. I have seen the panes of our windows here in earliest summer so thickly covered by the tiny creatures that one could scarcely see the glass. I have seen them almost as abundant on the windows of the Summit House on Mt. Washington in July.

Two or three years ago some tiny flies of reddish yellow came to my bedroom window up there in swarms and I collected many of them. The next year they appeared here in Franconia, also on windows. Mr. Coquillett pronounced them a new species, and has recently described it as *Anthalia flava*. This summer while watching a swarm of them upon my window, I noticed a few blackish ones among them of the same size and general appearance. These proved to be another species described not long ago by Mr. Melander as *bulbosa*. In examining small flies upon a window pane I often use a magnifying lens, and through this watch them for many minutes at a time. I have in this way sometimes seen an Empid with his beak inserted in another insect whose juices he was taking in with apparent enjoyment. I have never seen him capture the living insect, and will give him the benefit of the doubt and suppose that he may have been feasting upon a victim already deceased when he came upon it.

About the first of July I always find here a pretty little creature running rapidly over wet stones at the margin of streams. It is a tiny fly with gray wings variegated with black, and its habits are odd and interesting. Though its wings are fully formed and quite capable of flight, it very rarely uses them. When pursued by the collector it runs swiftly like an ant on and around the stone, and will continue this elusive performance for many minutes, though by spreading its pretty wings it could at once escape capture. Only in desperate extremity, as a very last resort, will it sometimes take flight and rest upon another near-by stone. For a long time I found them very difficult to catch. But at last I discovered that by seizing the stone on which one was running and dropping it quickly into my net I had the little fellow safe and sound. Mr. Coquillett has lately described this fly as *Tachydromia varipennis*. It is said to resemble closely in looks and habits *T. schwarzii*, a western species. One afternoon this summer as I came by a small brook running through a meadow I saw a moving cloud of insects near or on its surface. Looking more closely I saw that they were flies, and thought they must be Dolichopids, probably of the genus *Hydrophorus*. They flew back and forth just over the water, dipping into it at intervals in a wild, gay sort of dance, a water saturnalia. I had never seen anything just like it before. For a long time I tried vainly to capture one, but finally, after thoroughly soaking my flimsy butterfly net, bringing it up again and again dripping with muddy weeds and debris, I took a specimen, and found it to be a large male Empid. I caught fully a dozen in all, and every one was a male. I amused myself by fancying that the wives were hiding in the bushes near the stream and looking on contemptuously at the antics of their giddy spouses. "How silly!" I seemed to hear them whisper in dipterous tones, "you'd know they were males."

The next day, a little before sundown I went up upon our cottage piazza. Its floor had been lately painted, and shone and glistened as the western sun touched it. It was not very unlike a pool of water with the sunshine upon it, and so thought certain insects evidently. For here was a swam of flies going through just such a light and fantastic dance as I had witnessed the day before by the brookside. They flew swiftly back and forth, darting by and on one another, quite near the shining surface, and at brief intervals dipped and touched it. I ran for my net and caught one of the dancers; it was a female. I took ten in succession; all were females. And again it diverted me to imagine the curious wives saying to one another after their husbands, *Soiree dansante.* "Of course it was ridiculous, but let's try it, just for fun." The fly proved to be *Hilara tristis*, the specific adjective given, I suppose, because of the melancholy black in which the insect is clothed and not in ironical allusion to its giddy frolics. Mr. Melander speaks of *Hilara trivittata* as having similar habits, though in this species, males and females dance in company, but "the males are much more numerous." He adds, "some of the European species form balloons of spun web somewhat similar to those made by the North American *Empis ærobatica* during courtship as described by Aldrich and Turley (Am. Nat., Oct., 1899.") I will not spoil the interesting article alluded to by quoting parts of it. We have all seen airy castles built "during courtship," scarcely more substantial and lasting than these flimsy balloons. As in the Dolichopidæ and in Platypeza the legs of Empids are often appendaged or decorated variously. Sometimes they are thickly fringed with scalelike hairs, often parts of them are much enlarged or dilated, often sharply spined. These adornments are supposed to be for the purpose of attracting the attention and admiration of the opposite sex. You know how natural it is for one to "put one's best foot forward" in courting time.

Members of the genus *Hemerodromia* and the closely allied genera, *Mantipeza* and *Neoplosta*, are to me among the oddest of the Empids. Most of them are small, fragile, almost translucent flies, with white legs and antennæ. As they run upon a window pane with the light behind them they seem mere shadows, little ghosts, frail, elflike things. Though these sometimes appear upon the windows, I find them oftener resting on leaves near the ground in dense, dark shrubbery, and by reaching into these sheltered spots with my sweeping net I take several species, *scapularis*, *palloris*, *empiformis*, and others I do not yet recognize. When the golden-rod blossoms, in late summer, it is visited by many Empids, *Rhamphomyia umbilicata*, with milky white wings, the female having one black spot upon each, is our most common species here about the yellow, feathery flowers.

I have captured full fifty species of this family here in the mountains. But in South Florida my captures do not exceed a half dozen. It might be different there in midsummer when, of course, I am far away. On the ocean beach at Lake Worth, a small whitish Empid is abundant, flying over and alighting upon the white sand, its little body seeming so nearly of the same tint that one can hardly discern it. Mr. Melander has erected a new genus for this species, which has been also found at Wood's Holl, Massachusetts—and it is now *Coloboneura inusitata*. This fly I take during the whole winter. So my Empid hunting becomes an all-the-year-round pursuit, one full of interest, I assure you.

OWING to an oversight, Mr. W. D. Kearfott's name was incorrectly spelled on the cover, title-page and in the preface of Prof. Smith's New Check List of the Lepidoptera of Boreal America. A new title-page will be supplied, and all purchasers are requested to make the proper correction on the cover and in the preface.

WHY DO MOSQUITOES bite human beings? According to Dr. Santos Fernandez, of Cuba, it is because the females cannot form their eggs without sucking some warm blood. If they fail to get it they lay no eggs. *Ergo*, keep out of the way of mosquitoes and there will be no mosquitoes.—*Mobile Register*. *Apropos*, I have bred *Culex restuans* in the Black Mountains, N. C., from water putrified by dead animal matter. The larvæ did not infest the clear water near by. The species was kindly identified for me by D. W. Coquillett.—WM. BEUTENMULLER.

The Cicindelidae of Rhode Island.

By C. Abbott Davis, S. B.

The "Revision of the Cicindelidæ of Boreal America," by Mr. Charles W. Leng, constitutes an important step forward in the science of Entomology of North America.

It is a practical and thorough research, and his conclusions are just. For example, the California green *hirticollis* is therein recognized as a variety called *gravida* Lec.

This revision, however, compels a like revision of the Rhode Island list of Cicindelidæ, which to date is as follows, omitting several freaks and specimens of doubtful locality:

C. modesta Dej. is found in April and in September in sandy spots near woods, or perhaps along the edge of the woods.

It is quite local, and many Rhode Island collectors have never taken a single specimen, although there are three well-known spots where it may be found. One is in Warwick, one near Roger Williams' Park, and a third in Seekonk.

Four reliable members of the Rhode Island Entomological Society have made a study of *modesta* and its running mate, *rugifrons*. They all agree that they have taken the black male with a green female, and two at least have found intergrades with green head, blackish body, and *vice versa*. I have a few hybrids in my collection, and quote from Mr. F. H. Johnson (Jour. N. Y. Ent. Soc. vol. ii, p. 142) that "on Long Island occur *unicolor*, *nigrior*, *lecontei*, *modesta* and *rugifrons*, with *intergrades*."

In both *modesta* and *rugifrons* (which are here color varieties) the elytral markings vary greatly, the wider the white bands the handsomer the individual, as a rule.

Professor Gray, of Brown University, captured a sport *modesta* which is really an albino.

Modesta is not as common as *rugifrons*.

It should not be inferred from the above that sports are common; on the contrary, they are rare.

C. rugifrons Dej.

Dates, locality and habitat same as preceding. Not difficult to capture on a nice, warm, spring day. No absolute record occurs of *C. unicolor*, *nigrior* or *lecontei*, so they are omitted.

C. sexguttata Fab.

Occasionally taken April to June, either on logs, under bark, or along wooded paths or in gardens.

A strong flyer and hard to capture even with a long-handled net. My experience in exchange would lead me to infer that this species is the most widely distributed of all the Cicindelidæ in North America.

C. 4-guttata nov. var.

One glance at any Rhode Island collection of Cicindelidæ will convince any expert that this four-spotted insect is as distinct a variety as any so-called variety. The idea of calling four-spotted insects sex-guttata dates from 1775. During this century and a quarter have occurred many changes, and local specimens show a distinct difference from the typical *sexguttata*.

Some of these changes are as follows:

C. 4-guttata is much larger, averaging .55 inch. Its color is green, not blue, and this green so resembles *rugifrons* that local collectors have exchanged it for the latter. Possibly, it may be a hybrid between *sexguttata* and *rugifrons*, and there is a chance just here for more original research.

Both apical and marginal dots are well marked and of good size. Its range is from Northern Rhode Island into Massachusetts, and it occurs more commonly than the *sexguttata*.

(Named at the April '01 meeting of the R. I. Ent. Soc. from six specimens; more have been taken since.)

C. patruela Dej.

Taken occasionally in April and in September. Quite local; occurs in Warwick. A handsome insect—all shades of green to purple.

C. purpurea Oliv.

Common March 27th to October 1st on grassy roads, generally in pairs. Varies much in size and markings.

C limbalis Kl.

Very rare. Only two of this beautiful species are recorded.

They were taken by Professor Calder in September in Warwick. One was "retained for identification" in Philadelphia, and Professor Calder now has its mate, but fails to discover others, although the spot has been revisited.

C. spreta Lec.

Should be dropped from the Rhode Island check-list. It was named from Schaupp's description, but the type of *spreta* Lec. is green, while the description said black, and a single Rhode Island specimen was black.

C. generosa Dej.

Taken occasionally from May 6th to September 8th. A large, active specimen is taken occasionally on the sand-banks at Fields' Point (which locality is also famous for its clam-bakes).

C. vulgaris Say.

Abundant March 27th to November 2d. The most common species in the State. Wherever there is a sand-patch or road, there we may find it on a sunny day, and although so common, I notice few records of its food habits. Members of the R. I. Ent. Society have recorded it as eating ants and bees, and recently I kept one for two weeks on a diet of flies. It ate four *Musca domestica* in one day.

C. horiconensis Leng.

Of this greenish variety of *vulgaris*, I captured three specimens on April 27, 1901, and since then several members have taken one occasionally, but it is still uncommon.

C. repanda Dej.

Smaller than *vulgaris*, but almost as abundant. It prefers sandy spots near water, and herds by itself. Common April 20th to September 4th along the shores of Mashapaug Pond.

C. 12-guttata Dej.

Rare: only two stragglers recorded, both taken in April.

C. hirticollis Say.

Common April 22d to July 12th, probably later. To my mind this is the most interesting species we have, on account of the variations.

Mr. Leng writes: "We have, on the Atlantic coast, specimens in which the markings disappear more or less.

"In the specimens before me, a discal dot representing the end of the middle band, an apical lunule and some portions of the marginal band remain.

"I am doubtful whether this is even a race, and I assign no name to it, although it is quite generally separated in collections."

My idea, as a result of several years' observation, is that those individuals which live on white sand are marked with *wide white bands*, while those which live on mud-deltas are heavily black, *for purposes of protection*.

This means a variation of locality, and so I take the liberty of naming this variety, which Mr. Leng has so ably described on page 152 of his revision as

C. nigrita nov. var of **C. hirticollis.**

Let me add to his description. *C. nigrita* is smaller than *hirticollis*,—length of former .42 inch, while average Rhode Island *hirticollis* = .55 inch; more active. Very local, inhabits muddy shores, occurs in spots along Atlantic coast from Rhode Island to New Jersey. Described from scores of specimens from mud-flats of Warwick, R. I.

C. punctulata Fab.

Common July 12th to September 10th. This little fellow is very social and cosmopolitan. Occurs in gardens, front yards and even on the main streets of Providence. It varies a little in size, but Rhode Island specimens are quite regular in markings.

This is the only Cicindela I have ever taken at light.

C. dorsalis Say.

Common July 4th to 15th, perhaps later. This beautiful white Cicindela occurs at the sea-shore resorts where extensive stretches of sand occur, as at Watch Hill, Block Island and Newport.

I have discovered that, as the season advances, the elytral markings disappear by the *wearing action of the sand* in which they live.

Late in the season we get heavily immaculate specimens, but they rarely have a pink appearance.

Care must be taken in drying specimens, as the elytra discolor so readily. I find that if the elytra are lifted, and a piece of paper be introduced, and removed when the body is dried, many good specimens are saved.

C. Hentzii Dej.

The only rufous-abdomen variety we have. Rare. Taken in July only, by Kertz and Professor Calder.

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and, as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form, will be given free, when they are wanted; and this should be so stated on the MS., along with the number desired. The receipt of all papers will be acknowledged.—ED.

PHILADELPHIA, PA., OCTOBER, 1903.

Reports have been received that the collecting season has been poor all over the country and the disappointment has been quite general. The desire for new and interesting species appears to dominate, and if we always had success in collecting it is to be feared that other interests would suffer.

The absence of new specimens tends to call attention to our collections and unworked material, and we are thus likely to study and put into better shape the collections at hand. There is plenty of work to do other than describing new species, and there is nothing more useful than establishing the known species on a firmer foundation. Perhaps if collecting ceased for a period of a few years entomology would be all the better for it, as the time could be very profitably spent in useful studies. The loss, however, would be in the lack of pleasure of an outdoor life, the woods, the hills, the lakes and streams, and the physicial exercise and recreation that are part and parcel of the work.

WE recently received two wasps' nests from Pecos, Texas, and out of one hundred and forty-four *Polistes texanus* Cress. that emerged, thirty-four were stylopised by a specios of *Xenos*. Most of the *Xenos* appeared to be females, and only four males were secured. Many of the wasps had a number of the parasites on them.

A SLIGHT DIFFERENCE.—The Frenchman did not know all about the English language.

"I vould like to come see you ver' much. In fact, I vould have came, only I thought you vere ver' busy. I do not like to cockroach upon your time."

"Not 'cockroach,' that's not right. You should say 'encroach, encroach.'"

"Aha, that is it, 'hencroach, hencroach.' I see, I have got de gender of de verb wrong."

THE KISSING BUG OUTDONE.—Dangerous Bug from a Bog—Bite of Insect Causes Insanity of a Young Polish Farmer.—A dispatch to the Chicago Inter-Ocean from Mindon, Mich., says:

Oscar Newsasaki, a young Polish farmer near here, has become insane as the result of a bite by a bug. The day after he was bitten his body began to swell, and physicians have been unable to give him relief.

Professor P. E. Olinberg, an entomologist of Wheeling, W. Va., came here, at the request of the National Museum at Washington, to procure specimens of the bug. He found a nest of the insects in a bog near Newsasaki's home, and while trying to capture one was bitten on the chin, and within an hour was in a semi-conscious condition. He does not show the symptoms of insanity that appeared in Newsasaki's case, and the physicians are hopeful of his recovery.—*Newspaper.*

Doings of Societies.

A meeting of the American Entomological Society was held June 25th. Dr. Calvert, President, in the chair. Sixteen persons were present. The President announced the death of Charles A. Blake, one of the oldest members of the Society, who was elected October 22, 1860.

Dr. Skinner exhibited specimens of *Papilio troilus* from Chokoloskee, Florida, a southern race described from Texas, under the name *texanus* by Ehrman.

Mr. Daecke spoke of certain larvæ he had found under the bark of a pine tree. They emerged as flies from May 25th to June 15th, and proved to be the Syrphid fly *Xylota pigra* Fab.

Mr. Rehn exhibited two crickets, ♂, ♀, collected by Mr. Morgan Hebard at Thomasville, Georgia, which represent a new genus allied to one found on the Atlantic seaboard. The tambourine and ovipositor were compared in structure with the allied genus.

Mr. Bradley spoke of a trip to White Haven, Penna., after insects, and exhibited views of the country. Dragonflies were numerous. The locality was mentioned as being excellent collecting ground. Parasitic Hymenoptera were also abundant and several new Ichneumonidæ were found. Mr. Ilg exhibited a Lepidopterous larva from Japan. Mr. Matthews exhibited specimens of *Attacus splendidus*, *orizaba* and *calleta* reared from cocoons from Mexico. Mr. Laurent exhibited the butterflies taken by himself at Miami, Florida., between February 18th and April 7th; forty-eight species were taken. He stated that *Erycides amyntas* has the peculiar habit of alighting under leaves with the wings downward.

On Sunday last, Dr. Calvert and Mr. Daecke went to Manumuskin, N. J., and were successful in taking a number of *Telagrion daeckei* in the thickets southeast of the swamp, out of the way of the wind. Both sexes were taken. Mr. C. S. Brimley also took it at Raleigh, N. C., June 10th and later.

Dr. Calvert also stated that Mr. Henry L. Viereck had collected a number of the larvæ of *Micrathyria berenice* which had not previously been known. They live in salt water but not as salty as that of the ocean. The specimens were taken at Cape May: they will be described later. *Gomphæschna furcillata* was reported from Philadelphia. A male alighted on Dr. Calvert's kitchen door, and a female flew into the Academy of Natural Sciences.

HENRY SKINNER, *Recorder*.

The Annual Field Day (eighth quarterly meeting) of the Pacific Coast Entomological Society, was held on May 30th, at Leona Heights, Alameda Co., Cal.

Nine members and six invited guests participated in the outing.

One specimen of *Desmocerus californicus* was taken from the foliage of *Sambucus glaucus*: this species is very rare in this locality, one having been taken some fifteen years before. Many other good things were taken, among which may be mentioned *Omus californicus*, *Cychrus cristatus* and *interruptus*, *Cremastochilus angularis*, *Acmæops tumida* and *Exochomus pilatei*. The Lepidopterists took a number of good specimens.

F. E. BLAISDELL, M. D., *Secretary*.

EXCHANGES.

Not Exceeding Three Lines Free to Subscribers.

☞ These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and only when necessary those at the top (being longest in) are discontinued.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of species to be limited to twenty-five for each sending; 2d, the sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly; 4th, All insects must be mounted. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2-cent stamp with all insects for return of names. **Please put date of capture and exact locality on each specimen.** Before sending insects for identification, read page 41, Vol. III. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

North American Butterflies wanted in exchange for Lepidoptera of Southern California.—P. H. Hart, Pasadena, Cal.

Butterflies for exchange. Expect to have limited number of *Œneis chryxus*, *P. smintheus*, *Basilarchia wiedemeyeri* and others during summer. Send lists of what you have.—A. M. Hendee, Central City, Colo.

Will collect in all orders. Would like named or unnamed Coleoptera in exchange. Please write to G. Chagnon, P. O. Box 186 Montreal, Can.

Moths of Pennsylvania and New Jersey. The undersigned will give good exchange in cash or specimens for moths of Pennsylvania and New Jersey that are new to his collection. Send list of rare species only.—Philip Laurent, 31 East Mt. Airy Ave., Philadelphia, Pa.

Wanted.—Sphegidæ of North America, Mexico and the West Indies (as included in Cresson's Synopsis) for study in connection with a revision of the group. Material sent will be returned named as far as possible.—H. T. Fernald, Amherst, Mass

I will give Lepidoptera, publications or cash, for Smith's "Monograph of the Sphingids," published in Vol. xv, Trans. Ent. Soc., Acad. Nat. Sciences, 1888.—H. H. Newcomb, 35 Court St., Boston.

Hymenoptera.—Will be pleased to send duplicates in return for identifications.—Charles Stevenson, 906 St. Urbain Street, Montreal, Canada.

Wanted for cash, fertile ova of *regalis*, *imperialis*, *Triptogon modesta*, *Angulifera*.—H. M. Peinze, Northboro, Mass.

Will collect in all orders, insects of South East New England for Lepidoptera of North America.—L. W. Tilden, Box 54, New Bedford, Mass.

Wanted.—Fertile eggs, *Cith. regalis*, also all kinds *Thecla* and *Lycaena* for Lepidoptera from here.—H. M. Boyer, 220 Hudson Street, Reading, Pa.

Wanted.—Life histories in all orders of insects. Will pay cash or give exchange for same. Write what you have, and state lowest cash price.—Denton Bros., Wellesley, Mass.

Desirable Lepidoptera for exchange. Would like to receive lists of good species.—John Comstock, 1572 Ridge Ave., Evanston, Ill.

I will collect Lepidoptera, Coleoptera, Hymenoptera, Hemiptera of this locality, in exchange for Diurnal Ledidoptera of the United States, or named Diurnals of foreign countries. Write at once.—M. E. Hoag, D. D. S, Oakville, Iowa, U. S. A.

I will give Lepidoptera, publications or cash for Smith's "Monograph of the Sphingids," published in Vol. xv, Trans. Ent. Soc., 1888.—H. H. Newcomb, 35 Court Street, Boston.

Parnidæ.—Parnidæ of the world wanted. Will pay cash or give exchange. (Correspondence French, German or English).—William D. Richardson, Fredericksburg, Virginia.

Wanted.—Ent. News, vol. viii, No. 6.—Louis H. Joutel, 164 E. 117th Street, New York City.

Arctians.—Laying eggs or larvæ of any North American moths of the genus *Apantesis* wanted for purposes of studying preparatory stages. Will be glad to render help, if possible, as to wants of anyone assisting. Arthur Gibson, Cent. Exp. Farm, Ottawa, Can.

N. A. Lepidoptera desired. Those willing to collect, in exchange for European specimens, please communicate with James McDunnough, care Wilson, 385 Gt. Western Rd., Glascow, Scot.

Lepidoptera.—I have *Paonias astylus, Chalcnogramma jasminearum, Sphinx kalmiæ, plebeius* and other Sphingidæ of the Atlantic States for exchange for specimens not in my collection. Send lists.—Prof. Henry Wormsbacher, 122 Hutton St., Jersey City, N. J.

For Exchange.—Several thousand Colorado and Utah Lepidoptera in papers and pinned on small black pins. Will trade for a Winchester repeating take-down shot gun in perfect condition.—Arthur J. Snyder, Belvidere, Illinois.

I have some very fine and rare exotic and native Lepidoptera to exchange for native pupæ and cocoons. Will also take Catocala and Sphinx on pins or in papers. Send small lists to Charles F. Timm, 131 Ralpa St., Brooklyn, N. Y.

Wanted Cicindela scutellaris, pulchra, sexguttata, purpurea, formosa, lutesignata, fulgida, and vulgaris (any varieties), in as large number as possible. Coleoptera from northern Ill. and Ind.; Wood's Hole, Mass., and Elmira, N. Y., for exchange. Will collect as directed from the fauna of northern Ill.—V. E. Shelford, 5715 Drexel Ave., Chicago, Ill.

I wish to exchange American and European Lepidoptera and Coleoptera for American insects for the season of 1903. I am also a preparator of [illegible] Karl Hertel, 128 California St., Newton, Mass.

Coleoptera. Pleocoma Dohrnii Horn exchanged for Elaterids and Buprestids of the U. S. not yet represented in my cabinet.—A. Fenyes, M. D., [illegible] Cal.

Wanted for cash Transactions Am. Entom. Society, Vols. I.-XXVI.; [illegible] Vols. I.-IV.; Entomologica Americana, Vol. IV.; [illegible] News, Vols. I.-VI., XI., XII.; Canadian Entomologist, [illegible] XXXII.; [illegible] Missouri Reports; Fitch's New York [illegible] Rhynchophora; works and papers on Aphidæ [illegible] entomological works.—E. Dwight Sanderson, [illegible] Tex.

I have [illegible] Catocalæ, spread or in papers, from [illegible] or pupæ and cocoons.—A. [illegible]

American Coleoptera desired. Will give Hungarian species in exchange. [illegible] near Budapest, Hungaria.

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Heteronotus vulnerans.

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EXOTIC LEPIDOPTERA

Ernest Swinhoe, 37 Addison Gardens, London W., England

Will correspondents kindly note that I have left Oxford and that in future my address will be as above.

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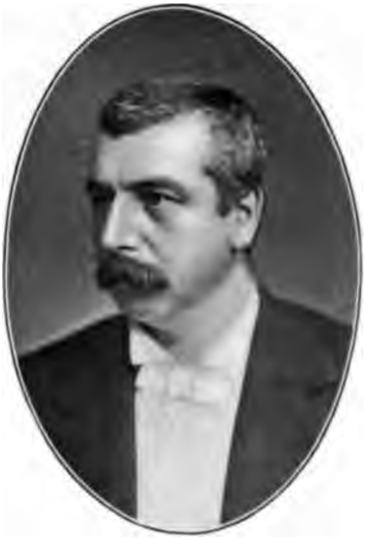

AUGUSTUS RADCLIFFE GROTE, M A.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XIV. NOVEMBER, 1903. No. 9.

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Augustus Radcliffe Grote, M.A.

Prof. Grote died of endocarditis on September 12th last at Hildesheim, Hanover, Germany, where he was Director of the Roman Museum. He was born on February 7, 1841, in Aigburt, near Liverpool, England. His father was a German from Danzig and his mother an English-woman. He came to America when a child and spent his early days in New York. About 1884 he left the United States and resided at Bremen, Germany, and went to Hildesheim in 1895. He leaves a wife and six children. His scientific work began about 1862, at which time he was a contributor to the Proceedings of the Entomological Society of Philadelphia. The first three volumes of the Bulletin of the Buffalo Society of Natural History (1873-1877) contain numerous articles on American Lepidoptera, by Grote, mostly on moths. He was curator of the Buffalo Society, and a very active member. The three volumes mentioned contain no less than twenty-seven articles. There are a few, however, devoted to subjects non-entomological, such as "Descriptions of New Crustaceans from the Water Lime Group," "On the Peopling of America." Some other writings not relating to natural history are the following: Genesis I, II, An Essay on the Bible Narrative of Creation, the New Infidelity, Rip Van Winkle, a Sun-myth, and other Poems. He was also a student of ancient roman matters. He left Buffalo in 1882 (?) for New Brighton, Staten Island, New York, where he remained until he took up his residence abroad. Strecker[*] down to 1878 lists about one hundred articles by Grote which appeared in the following publications: Ann. N. Y. Lyc. Nat. Hist.; Proc. Acad. Nat. Sci. Phila.; Bull. Buffalo Soc. Nat. Hist.; Can. Ent.; Bull. U. S. Geol. and Geogr. Surv. iv, 1; Proc. Am. Philos. Soc.; Proc. Ent. Soc. Phila.; Trans. Am. Ent. Soc.; Rep. Pbdy. Acad. Sci.; Stett. Ent. Zeit. Since 1878 numerous articles have appeared in Proc. Am. Philos. Soc.; Can. Ent.: Papilio, etc., and European journals. In 1862 the American Entomological Society honored him with membership. In July, 1879, he entered into entomological journalism and edited the North American Entomologist, published by Reinecke, Zesch and Baltz in Buffalo, New York. One volume of twelve numbers appeared. This was a very creditable publication, and among its contributors were distinguished students of entomology. He was an authority on the entomological fauna of Western New York State, particularly the region about Buffalo, but will be best remembered for his systematic work on North American Noctuidæ. He described numerous species of Lepidoptera, aggregating over a thousand. His work made a great impression on our literature of the subject, and was painstaking and accurate. His descriptions are good, and his species well known. He will undoubtedly be classed as one of the greatest students of American Lepidopterology. His catalogues were most valuable and universally used. A Check List of the Noctuidæ of North America was published by Reinecke and Zesch, at Buffalo, in 1876, and a new Check List of North American moths at New York in 1882. His valuable collection, containing the bulk of his types, was sold to the British Museum some years ago.[†]

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[*] Butterflies. Moths. Syn. Cat Reading 1878.

[†] The portrait of Mr. Grote was supplied by his old friend and coworker Mr Ottomar Reinecke of Buffalo. It was taken in 1877.

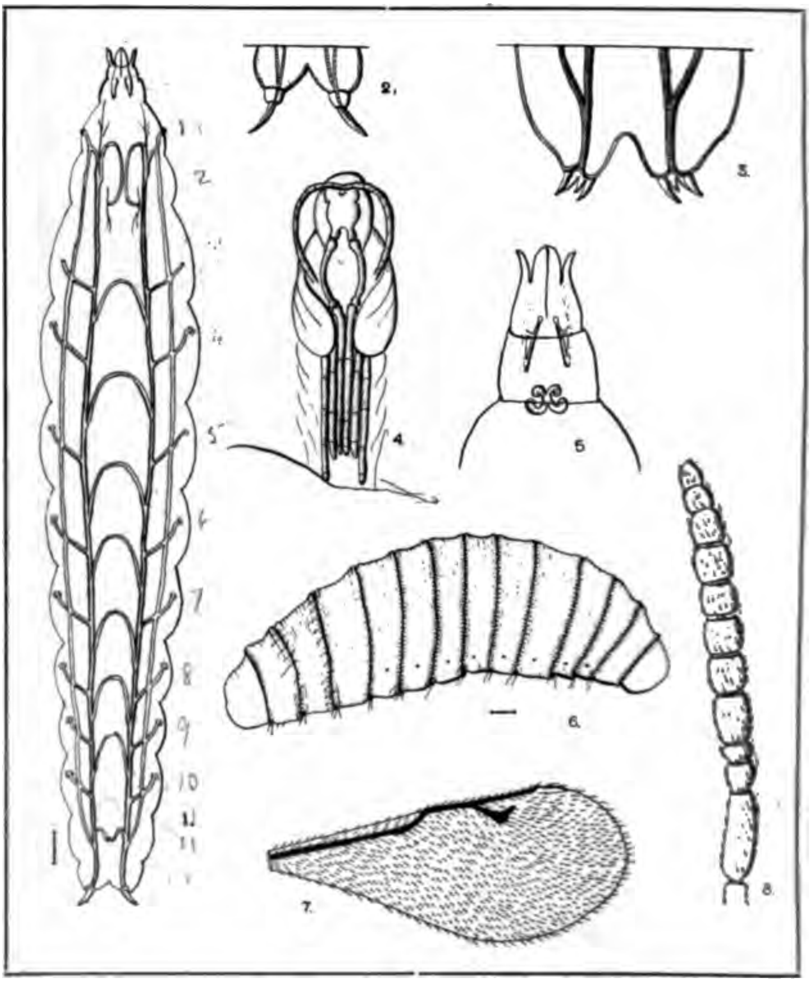


Fig. 1. Tracheal system of *Diplosis resinicola*.
Fig. 2. Anal spiracles of young larva.
Fig. 3. Same of full-grown larva, drawn on a scale half as large as Fig. 2.
Fig. 4. Empty pupa case as seen projecting from lump of resin.
Fig. 5. Head and supernumerary segment, showing "breast-bone."
Fig. 6. Larva of *Syntasis diplosidis*.
Fig. 7. Wing of adult of same.
Fig. 8. Antenna of same.

The Resin-Gnat Diplosis and Three of its Parasites.*

By Lida S. Eckel.

(With Plate XIV.)

Pinus rigida is the most common pine in this immediate vicinity. July first the many empty pupa-cases projecting from the lumps of resin which are abundant on the two-year old (and older) parts of the pine stems, showed that the adults of *Diplosis resinicola* O. S. had been escaping in numbers, and attracted my attention.

The orange-colored larvæ of this species living in numbers within the lumps of resin were first reported by Mr. Sanborn †; the adult was described by Osten Sacken in 1871 ‡; and it has since been recorded from New York to Florida on various species of pine. The fact that the transformations are undergone within the lumps of resin were first noted by Packard ||.

A point of primary importance to the adult insect is a safe place to deposit its eggs. During the first week in July while they were emerging in numbers from the lumps of resin on the twigs kept in the laboratory, they deposited their eggs in quantities on the fresh resin provided, never upon the old hardened lumps, and never upon any of the twigs or leaves. No new lumps of resin appeared upon the stems, which would have been the case had the *Diplosis* been in the habit of puncturing the bark and thus providing resin for itself. In a cluster of infested pines where many fresh pupa-cases were observed upon the resin, and where adults were occasionally seen flying about, I cut a number of slits in the twigs. In every instance (over twenty) within twenty-four hours, the *Diplosis* had discovered and utilized the fresh resin. It was interesting to see that where the pitch exuded in a spherical drop, the bright orange eggs were arranged regularly around its equator projecting radially. A few of these eggs hatched

---

* A study made at the Marine Biological Laboratory, Woods Hole, Mass., 1903, under the direction of Mr. C. T. Brues.

† Proc. Bost. Soc Nat. Hist. XII, 93.

‡ Trans. Am. Ent. Soc. III, 345.

|| Fifth Rept. U. S. Ent. Com., p. 797. See also Comstock's Manual of Insects, p. 447.

within forty-eight hours. From this it appears that the *Diplosis* take advantage of resin lumps supplied sometimes by accident, no doubt, to the trees, and sometimes by other insects.

The very young larvæ creep about beneath the surface of the lumps of resin, and rapidly grow to twice their original size, gradually making their way toward the part of the twig from which the supply of soft resin is exuding. This movement causes them to collect in a group with their mouths close together and their orange red bodies extending toward the surface of the lump. After fifteen or eighteen days they have grown from 3 to 7.5 millimetres in length, having undergone numerous changes. Externally can be seen the supernumerary segment directly behind the head, into which the latter is incessantly withdrawn, the peculiar "breastbone" on the ventral surface (see Fig. 5), and the horned anal spiracles, all characters of the Cecidomyid larvæ. The very young have the hook like spines across the ventral surface of each segment. These disappear with growth, and the entire skin becomes covered with fine spines, curving backward. In the ontogeny they appear first on the anterior part of each segment, but beginning with the posterior ones.

The tracheal system which is diagrammed in figure 1, can be readily studied in the live animal or in ones which have been mounted alive in glycerine. Near the anal spiracles the tracheal trunk on each side divides into two main tubes, one dorsal and one ventral, which extend forward as far as the first thoracic segment. At this point the ventral one sends branches to the head, and the dorsal bends back to supply the thorax. In the first thoracic and first seven abdominal segments, each dorsal trachea sends a tube to the ventral one, which continues to the side, and opens in a black-capped spiracle a little below the lateral line of the body. In the third thoracic segment, although the tube is conspicuously present, I failed, in any larvæ examined, to find an external opening. In the abdominal segments, except the last two, the dorsal trunks are connected by long cross tubes, which tough but flexible, form intricate patterns with the ceaseless movements of the larvæ. The lateral spiracles are always imbedded in the gum, and the terminal ones kept at the surface. The tracheal system undergoes no change with larval growth, except the odd developement about the anal spiracles which is shown in the comparative diagrams (Figs. 2, 3).

Is the food derived from the twig or from the resin? I made note of the following points: 1. The mouth-parts are exceedingly soft and delicate. 2. The young grow rapidly near the surface of the resin. 3. The twistings of perhaps a dozen spiny-skinned larvæ hollow and smooth out a round cavity, the irritation causing a constant supply of fresh resin, so that no lump containing live larvæ ever becomes entirely hardened. This soft resin is full of microscopic splinters of wood fibre, which would probably have been consumed had the larvæ detached them with their mouths. The digestive tract, so far as I could ascertain, contained none of them. 4. Where the resin supply was abundant, without any activity on the part of the larvæ, no cavity was formed and no splinters were present in the resin, although the larvæ continued to grow normally. 5. I placed a drop of resin upon which nineteen eggs had been deposited in the laboratory, upon the smoothly cut surface of a sound twig. There was a fair flow of resin, and in two weeks, and even after two weeks, when the larvæ were quite large, the only damage to the twig was a small spot just beneath them where the cells appeared dead. There was, however, no roughening or cavity.

The pupæ measure 5 millimeters in length. The head and appendages are covered by a black pupal integument, only the shrunken abdomen retaining its deep orange color. They lie with their heads toward the surface of the lump, inside the innermost end of the detached larval skin, which is not shed, pupation going on within it. The loosened skins are white and papery, and extend to the surface with their inner ends so closely packed that they adhere to each other, and slightly to the twig. Thus the whole eight, or perhaps a dozen, form a core-like mass with irregularly radiating rays, which can be lifted out entire more easily than separately.

When ready to emerge, the insect pushes itself outward by a backward and forward movement of the thorax and abdomen, and by the time it reaches the surface end of the larval skin it has worked a hole in the top of the head-piece. The motion in freeing itself is interesting. The insect is upright; the thorax is repeatedly bent gently forward and jerked backward; as soon as enough of an antenna is free, it uses the joints and pulls the end out; the same with the legs; it then mounts the projecting pupa-case, draws out the abdomen. steps lightly down upon the resin, spreads its wings and flies off. The proceeding is very business-like; at each stage it seems to know exactly what to do, and does it promptly. The whole procedure occupies less than four minutes after the head emerges. The projection of the pupa-case (Fig. 4) is incidental to the efforts, as the escaping insects often walk over the resin itself.

The number of larvæ that develop in any one lump is controlled partly of course by the number of eggs deposited, but more by the supply of resin. Eggs deposited in the spring when the resin flows abundantly, have a better chance for life than the succeeding generation, many of which perish by the drying of the small drop, and by the attacks of parasites. Throughout July a Proctotrupid parasite of the larvæ was frequently observed. This is one of the smallest of the parasitic hymenoptera, *Polygnotus pinicola* Ashm. described by Ashmead as a parasite of *Diplosis pini-inopis* (Bull. U. S. Nat'l Museum, No. 45, p. 307), but now mentioned for the first time, I believe, as a parasite upon *Diplosis resinicola*. July was too late for me to find the larval stage, as they were already pupating, as many as twenty in a single larval skin of the fly. They feed upon the *Diplosis* larvæ, consuming them completely, leaving only the tough tracheal tubes untouched, which together with the spiny outer skin serve to identify these blackened skins as those of the *Diplosis*. The latter now lie tangentially or slanting near the surface of the resin, the irritated larvæ being rendered no doubt too restless to remain in position. The *Polygnotus* lie closely packed back to back, generally with their heads toward the surface tip of the parasitized larva. Before escaping they practise a few preliminary exercises by popping the head out and back.

Through August the pupæ of the *Diplosis* are destroyed in great numbers by two species of Chalcid-flies. Of the first one, a Pteromalid (*Syntasis diplosidis* sp. nov.), I secured numbers of the larvæ, pupæ and adults, and append a description of the adult at the end of this paper. The larva when grown is three millimeters in length, yellowish-white, the skin in very fine transverse ridges. At the articulations between the segments, the ridge is emphasized, and from it grow fine long bristles ventrally, or completely around on a few of the segments (Fig. 6).

There is but one *Syntasis* in each larval skin which remains white. The younger ones are attached externally to the *Diplosis* pupæ, but when they are fully grown no trace of the pupae remains, not even the tough pupal integument. The parasites lie at the inner end of the larval skin, where the departed host lay. There they pupate, and the adults escape through the tube-like larval skin, just as the host would have done. A whole group of larval skins sometimes changes inhabitants in this way in August, and whenever a group is invaded by the Chalcis-fly, the undestroyed pupae will be found dead. When the intruder is present the bark is undermined and brittle and the wood friable. Have these things anything to do with the entrance of the parasites? No larvae or adults appeared in my material before August.

The second species of Chalcid-fly, of which I obtained only a few specimens is a species belonging to the genus *Eupelmus*.

As the species of Syntasis is an undescribed form,* I give here its description.

Syntasis diplosidis sp. nov.

Female.—Length 3.5 mm.—Metallic blue-green, the blue predominating, antennæ black except at the base, legs dark at base, yellowish at the tips.

Head three times as wide as long, rather coarsely confluently punctate, shagreened between the punctures; lateral ocelli as far from the eye as from the median ocellus; mandibles yellow, the four teeth at the apex black; palpi yellow. Antennæ twice as long as the head height; scape yellow, not reaching to the median ocellus; pedicel small and very short, one ring joint, flagellar joints of equal length and gradually increasing width, except the first, which is twice as long as the others, and the last, which is small and more or less triangular. Prothorax much more finely punctured than the head, especially below; remainder of the thorax rugulosely, separately punctured. Wings hyaline; marginal vein twice as long as the stigmal and one and one-half times as long as the post-marginal. Under side of thorax and coxæ green, shagreened. Legs honey yellow, brownish on the femora and the apical joints of all the tarsi. Abdomen blue-green, polished; slightly longer than the thorax. Body everywhere sparsely whitish pilose.

---

* Mr. Ashmead, to whom specimens were sent, writes that it is new, and has suggested that it be described in this paper which contains the account of its habits.

Type locality, Woods Hole, Mass. Cotypes are in the U. S. Nat'l Museum and in the Amer. Mus. of Nat. History.

Described from numerous specimens bred, as described in the preceding account, from larvae of the Cecidomyid (*Diplosis resinicola.*)

Citheronia sepulcralis in Pennsylvania.

By John M. Geddes.

On looking over Mr. Philip Laurent's list of the moths of Eastern Pennsylvania, published in the News, I notice that he has omitted *Citheronia sepulcralis.* In a letter received from Mr. Laurent, he states that he has never heard of its being found in Pennsylvania, the farthest northern limit of which he knows being the vicinity of Washington, D. C.[*]

I have taken specimens of both larva and imago in Williamsport, Pennsylvania, and vicinity; and, although not common, they are not extremely rare, as I took three specimens of the moth, two males and a female, within a week, and found two larvæ in a morning's walk. The first specimen of *sepulcralis* I captured was in July, 1902, at an electric light in the northern part of the city, and I thought it a Sphingid moth of some species until I got it down from the wire to which it was clinging. It was a male, and had probably just emerged, as it was absolutely perfect. This last July I captured two males and a female at electric lights, all imperfect specimens, especially the female. Before she died, however, she laid about seventy eggs, which hatched in ten days, producing larvæ which very much resembled those of *regalis* except in their color, which was orange and black at first, but changed to light tan and black after a few hours feeding.

---

[*] The type came from Andover, Mass. It has been also found at Easton, Pennsylvania, and Manchester, N. H., and doubtless other places north of Pennsylvania. Eds.

Some of the eggs did not hatch, and with the ones that did I had very poor luck ; only one reached the last stage, and it died before pupating. When first hatched I tried them on white pine, which they ate but did not seem to like particularly. I finally gave them pitch pine to which they took naturally, and for three or four weeks grew beautifully ; but in undergoing the last molt trouble commenced, and they began to die without any apparent provocation. Within a few hours after death they were reduced to an evil-smelling semi-liquid state, and a very light touch would cause the skin to break and fall apart. I can offer no explanation of this, as they seemed perfectly healthy and contented up to twenty-four hours before death.

About the second week in September, I found two mature *sepulcralis* larvæ feeding on pitch pine in a grove just north of the city, and later found one on yellow pine. They are of a rather peculiar color, shading from yellowish to purplish brown, and being much wrinkled and humped. The thoracic segments and the dorsum of the eleventh segment contain long yellowish horns, and there are also subdorsal, sublateral and substigmatal rows of spines. They are high feeders usually and, unless feeding in a bunch of needles, are hard to see ; as, when on a limb, they very much resemble a piece of loose bark.

Up to July, 1902, I had never heard of *sepulcralis* being taken in Pennsylvania ; but it may be quite local, as pitch pine (*Pinus rigida*) and yellow pine (*Pinus mitis*), on which it feeds, are both quite abundant in this locality.

Williamsport, Lycoming County, is within seventy miles of the northern border of Pennsylvania, so that it is quite a gain over Washington, D. C., for a northern range for *sepulcralis* ; and possibly it may be found still farther north than Pennsylvania.*

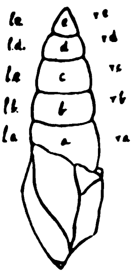
---

*See ENT. NEWS, 1890, p. 124, and 1892, p. 232.—EDS.

Some Experiments with a Chrysalis.

The only pretext for the presentation of the following experiments, conducted upon a chrysalis, is that an acquaintance with the behavior of an organism in that particular stage of development may disclose new peculiarities of interest to students of "mental evolution" in animals.

Let *a*, *b*, *c*, *d* and *e* (apex) represent the segments of the chrysalis. Also let the right and left sides of the segments, with the front view up, be designated by *ra*, *rb*, *rc*, *rd* and *re*: and *la*, *lb*, *lc*, *ld* and *le*.



Having rapped the chrysalis at different points of the segments until the organism showed apparent sign of agitation; segment *a* at *ra*,—after a short lapse—was rapped, —as was naturally expected, *ra* contracted and *la* expanded. Next *rb* was attacked: as in the case of *ra*, it contracted. As a matter of course, *lb* expanded. The same repetition continued until *re* was reached. As the chrysalis now stood, *ra*, *rb*, *rc*, *rd* and *re* remained contracted; and *la*, *lb*, *lc*, *ld* and *le* expanded. Next *la*, *lb*, *lc*, *ld* and *le* were attacked respectively, as a consequence of which *ra*, *rb*, *rc*, *rd* and *re* expanded according to the contraction of the corresponding opposites. Thus far these experiments elicited no evidence that the activities displayed were prompted by some mental operations. However, before proceeding further, let us note what these experiments disclosed. It was observed that when any particular segment was hit on either left or right side, the succeeding segment remained unagitated; that is, it showed no sign of disturbance. For instance, when *a* was struck at *ra*, *rb* remained motionless until it itself received a blow.

A second series of experiments was performed with the same results as disclosed by the first series, except towards the close, when a change in the monotony of impulses occurred. No sooner was any of the segments hit, than the succeeding one showed apparent sign of disturbance, yet the second succeeding one remained unagitated.

The third series of experiments disclosed further encouraging signs of mental operations underlying the displayed activities. When *ar* was rapped, *br*, *cr*, *dr* and *er* contracted respectively instead of remaining motionless until each received individual blow. Apparently from previous experience, the organism foresaw, when *ar* was hit, that the succeeding segments were doomed to the same unpleasantness, so a total contraction was signalled to all on one side.

The fourth series of experiments was conducted after the chrysalis had been left undisturbed for a number of days. The blow was not, as in former experiments, given at either *ra* or *la*, but at the apex. The change of starting points was made purposely to give the organism a larger field for exercise of higher mental activities than hitherto.

Shortly after the experiment was resumed, the organism so readily recalled the experiments of the previous days that when *re* or *le* (at the apex) was touched, the succeeding segments on either side (not both) contracted successively. After a continuation of similar experiments, the organism learned to contract both sides of segments simultaneously in response to impulse starting from any point of the body.

Hopes of further experimenting were frustrated by untimely extinction of life.

List of Types of Catocala in the British Museum.*

By George F. Hampson.

Catocala belfragiana Hbrv.
" *illecta* Walk.
" *whitneyi* Dodge.
" *nuptialis* Walk.
" *westcottii* Grote.
" *chelidonia* Grote.
" *sordida* Grote.
" *nuptula* Walk.
" *alabamæ* Grote
" *mira* Grote.
" *basalis* Grote.
" *cœlebs* Grote.
" *adoptiva* Grote.
" *unijuga* Walk.
Catocala semirelicta Grote.
" *junctura* Walk.
" *sinuosa* Grote.
" *verrilliana* Grote.
" *concumbens* Walk.
" *bunkeri* Grote.
" *relicta* Walk.
" *levetteii* Grote.
" *angusi* Grote.
" *residua* Grote.
" *obscura* Streck.
" *simulatilis* Grote.
" *subviridis* Harvey.

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* The above list of types was kindly sent to me by Sir George F. Hampson, for my own use, but considering it worth while, I take the liberty of offering the same for publication.—Wm. BEUTENMULLER.

known names to some of our common species in preference to those new and untried, and which are liable to change with the next revision of the group or genus to which they belong. Life is too short to spend much of it in following out the endless number of synonyms that are being constantly added to our lists of insects, if one expects to do anything else, especially as these changes are wholly matters of opinion and the reason for which seems to exist only in the eyes of the persons responsible for them.

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Nests of Agenia Architecta Say.

By S. Arthur Johnson.

While collecting the nests of *Anthophora occidentalis* last winter, I came upon a number of nests of the above species. They were formed within the tunnels of *Anthophora*, which are about 10mm. in diameter, the first cell being attached to the tunnel wall by a curved base. The cells are joined end to end, run lengthwise the tunnel, and number from two to five in each series. One tunnel furnished three parallel series of cells. The imago makes its exit by breaking through the lateral wall of the cell instead of the end as in most species of bees and wasps.

Say (Vol. 1, p. 303) gives the following description of the nest.

"The insect forms neat mud nests under prostrate logs and stones. They consist of short cylinders, agglutinated together alternately, and each composed of little pellets of mud, compressed or rather appressed to each other. When these are adjusted to their places on the edge of the cylinder, each has a fusiform shape, and the slender end of one laps over that of another, and the convex part of the pellet of the succeeding layer is placed against this duplicature, so as to restore the equality of the edge. This arrangement gives the surface an alternate appearance."

Adult insects bred from the cells were determined by H. T. Fernald and photographs of the nests and wasp made by C. P. Gillette.

A Dexiid Parasite of the Sow-Bug.

By C. T. Brues.

During the past summer while collecting insects near Woods Hole, Massachusetts, I chanced upon a specimen of the sow-bug *Porcellio* which had evidently been dead for some time. On rolling over the log under which it was concealed in company with many living specimens of its own species, the chitinous remains were accidentally broken apart, disclosing within its body the orange-colored puparium of a fly.

This attracted my attention, and was brought home in hopes of obtaining the adult fly. After some days the latter appeared, a small, intensely black Dexiid. It proved to be a member of the genus *Melanophora* Family Dexiidæ, and agrees very well with the description given by Schiner (Fauna Austriaca, II) of *Melanophora roralis* Linn., a species common to both Europe and North America.

The larvæ of another European species of this genus, *helicivora*, has been found by Goureau (Ann. Soc. Ent. France, II, I, 77), in a snail (*Helix conspurcata*), upon which it is evidently parasitic. Shimer has described a species from Illinois parasitic on the Chrysomelid beetle *Diabrotica*. From his figure (Am. Nat. V, 219), it is probable, however, that the fly is not a *Melanophora* at all, since the first posterior cell is open and not closed by a long petiole as in the other species of the genus.

The puparium of *M. roralis* is deep orange yellow in color, with the anal respiratory tubercles blackened. It is quite smooth and shining except at the posterior tip, and measures 5mm. in length, which is about the size of the adult fly. It occupies almost all the available body space in the parasitized *Porcellio*.

The species of *Porcellio* from which my specimen was bred is probably *P. scaber* Latr., and is extremely common at Woods Hole under fallen logs. The fly is of general occurrence in the same region, although never very common.

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Mr. J. Chester Bradley has entered Cornell University, and his address is 325 Dryden Road, Ithaca, New York.

On two Earwigs of the genus Labia from Costa Rica.

BY JAMES A. G. REHN.

These specimens were received for examination too late to be included in a general study of the earwigs collected by Messrs. Schild and Burgdorf (*vide* Proc. Acad. Nat. Sci. Phila., LV, (1903), pp. 299–312).

Labia annulata (Fabricius).

1793 (*Forficula*) *annulata* Fabricius, Entomolog. Syst., ii, p. 4. ["Americæ meridionalis Insulis."]

Labia arcuata Scudder, Proc. Boston Soc. Nat. Hist., xviii, p. 257. 1876.

One female; Carillo, Costa Rica (Schild and Burgdorf.) [U. S. N. M].

This specimen differs from the usual type in the absence of yellowish markings on the pronotum.

The name here revived for this species seems to be perfectly applicable. This fact has already been noticed by Bormans and Krauss (Das Tierreich, XI Lief., Forficulidæ und Hemimeridæ, p. 69), who, however, did not revive the name.

Labia auricoma n. sp.

Type: ♀; Piedras Negras, Costa Rica. (Schild and Burgdorf). [Cat. No. 6942, U. S. N. M].

Allied to *L. chalybea* Dohrn, but differing in the smaller size, the yellow colored pronotum (which is also of comparatively smaller size and has the posterior margin more arcuate), the hairs on the abdomen being golden instead of black, in the posteriorly constricted tegmina and the small exposed area of the wings. Relationship also appears to exist with *L. championi* Bormans, but the latter is separated by the unhaired body, the short tegmina, subequal abdomen, and different coloration.

Size very small; body stout, centrally constricted. Head polished; antennæ composed of fourteen joints, sub-moniliform. Pronotum transverse, not equalling the head and considerably less than the tegmina in width; anterior margin truncate, posterior arcuate, the laterals sub parallel; transverse central depression marked, the median portion with a distinct longitudinal sulcus anteriorly. Tegmina broad, subequal in width in the basal half, tapering in the apical portion; lateral sections deflected; scapular angle well rounded; apical section gently rounded;

surface rugulose. Exposed portion of wings very small, not one-seventh of the length of the tegmina, rounded, surface as in the tegmina. Abdomen centrally expanded, the surface beset with fine hairs, and toward the apex with distinct bristles. Supra-anal plate narrow, transverse, the apical margin truncate, centrally with a broad, longitudinal depression. Forceps very short and stout, simple, the tips meeting, the whole with a strong upward curve. Subgenital plate narrow, transverse, apical margin very broadly rounded. Limbs stout, the femora considerably inflated.

General colors solid black and reddish brown. Head polished black, antennæ, palpi, mandibles, and a trace on the clypeus brown. Pronotum brown, palest laterally. Tegmina and exposed portion of wings dull black. Abdomen dark brown, each dorsal segment edged with yellowish brown ; ventral surface uniform dull ochraceous. Forceps and limbs rich reddish.

MEASUREMENTS.

Length of body,	5. 2 mm.	Length of tegmina,	3.2 mm.
Length of pronotum,	.7 "	Anterior width of tegmina,	1.5 "
Width of pronotum,	.7 "	Length of forceps,	.7 "

Another Yucca-feeding Insect.

By Mary E. Murtfeldt, Kirkwood, Mo.

The Yucca plant, which has contributed so largely during the past twenty-five years to the fascinating chapter of the interrelations of plants and insects, still continues to afford interesting subjects of study to the entomologist. As an example of this, while collecting moths of *Pronuba* and *Prodoxus* from the blossoms of *Yucca filamentosa* on June 15, 1902, I perceived that the segments of the perianth were extensively mined by small larvæ of exactly the color of the blossoms, but which betrayed their presence by the large transparent spots which resulted from their appropriation of the opaque tissue. As a micro-lepidopterist I was naturally disappointed to find, upon examination, that these were coleopterous larvæ, but determined to make the attempt to rear them, and as it was very probable that the parent insect might also be found in the flower, a number of small beetles were taken, among which was a handsome little Nitidulid of a red-brown color with black elytra which were truncate and abbreviated. My conjecture that these were the parents of the miners proved later to be correct.

A considerable number of the mined blossoms were also gathered and placed in two or three small jars upon sterilized garden soil, as it was feared that sand might not be congenial to them. These blossoms deliquesced rapidly and fresh ones were supplied which the larvæ promptly entered—a habit common among dipterous and coleopterous leaf-miners, but unusual with lepidopterous species. By the 19th, however, all the larvæ had entered the ground, several resting in perpendicular tunnels against the glass, from two-thirds to over an inch beneath the surface, in excellent position for the convenience of the observer.

The full grown larva is 6 mm. in length by 1.5 in diameter, which is nearly equal throughout. Form subdepressed, surface smooth, color immaculate milk-white, except the tips of the trophi which are pale brown. The head, cervical plate, the three-jointed antennæ, the not very strongly developed legs and the smooth spines of the posterior segment are corneous and translucent.

These larvæ were all nearly grown when taken and their development must have coincided with that of the blossoms in a single panicle, which is very brief.

By June 27th the larvæ which were visible against the glass had transformed to short thick pupæ which, except in the matter of size, resembled that of *Ips fasciatus* as figured by Dr. Forbes. Supposing that they would continue in this state for some time,—perhaps over winter,—no exact description of these pupæ was taken, and I was much surprised to discover on July 6th that the second transformation had taken place and the beetles were already perfected. Now comes the interesting and, as seems to me, somewhat unusual phase of their life history. They did not emerge from the ground or even change position in their resting places, but when the contents of one of the jars was turned out upon a paper the beetles manifested considerable activity, and when placed upon the hardened earth in another jar immediately burrowed into it evidently for concealment and protection during hibernation. I scarcely expected that they would survive the winter under the unusual conditions of their close quarters and in the hot dry air of my study, but on April 1st two fine specimens were found in one of the jars, and between that date and the 12th several more emerged. This probably antedates by nearly two months the period of their natural emergence out of doors.

That the vitality of this tiny insect in the imago stage should have been able to withstand the ten months abstinence from nourishment, the comparatively high temperature, the compact and dry condition of the earth in the rearing jar, and even the disturbance of having its cells broken when the earth was turned out for examination and being subject, through this, to an unwonted, though brief activity, and yet come out in a state of perfection equal to those developed under accustomed conditions appears to me noteworthy.

The species was kindly determined for me by Dr. Schwarz, of the National Museum, as *Carpophilus melanopterus* Erich., with the remark: "Known from Georgia, Texas and Mexico, but by no means common. The species usually found in Yucca blossoms is *C. pallipennis*."

A New Ammoplanus.

By William H. Ashmead, M. A., D. Sc.

Ammoplanus cockerelli sp. nov.

♀.—Length 2.5mm. Black, the surface smooth and shining, except the metanotum which is opaque, shagreened and with some raised lines; the mandibles, except the teeth, the palpi and the tegulæ, white; antennæ pale testaceous whitish beneath; legs black the tips of trochanters, the apices of the femora, all tibiæ except a brownish spot toward apex of the hind pair and the tarsi, pale honey-yellow; wings hyaline, with the subcostal vein towards apex, and the large stigma brown; the other veins are pallid or nearly hyaline.

Type.—Cat. No. 6930, U. S. N. M.

Hab.—Las Cruces, N. Mex.

This interesting species is dedicated to its discoverer, Prof. T. D. A. Cockerell, who took it three or four years ago, on September 23rd.

It is allied to *Ammoplanus* (*Anacrabro*) *lævis* Provancher, described from California, but is proportionately smaller, with a smaller head, and slightly different colored antennæ and tibiæ.

Notes on the Butterflies, of Miami, Florida.

BY PHILIP LAURENT.

Now that the time of the year approaches when the eyes of the collecting entomologist turn longingly towards the "Sunny South," it seems to the writer not to be out of place to mention what our entomological friend interested in the butterflies would be apt to find at Miami, Florida, during the winter months. It was the writer's good fortune to spend the greater part of two months at the above named place—February 18th, to April 8th. As might be expected, I was not fortunate enough to capture specimens of all the species known to occur in southern Florida, but the following list no doubt embraces the larger portion of the butterflies that our southern visitor is apt to run across in and around Miami. I have added the species collected by Mr. Morgan Hebard (see ENTO. NEWS for October, 1903), as well as several species collected by the resident naturalist of Miami, Mr. Dickenson. To any of my brother, or sister, collectors who should visit this part of Florida, I would advise them to hunt up Mr. Dickenson at once, as he can and will direct you to the best places in and around Miami where you are likely to find good collecting. I have stated in the list such species as I found to be common, and in all other cases it can be taken for granted that the species were more or less rare. Perhaps at some future time I may give to the readers of the NEWS a list of other insects collected during my all too brief stay at this interesting place in Florida. The following list is arranged in accordance with the catalogue published by Dr. Skinner in 1898.

2 *Danias berenice* Cram., common.
6 *Heliconius charitonius* Linn., common.
9 *Agraulis vanillæ* Linn., common.
114 *Phyciodes phaon* Edw., common.
146 *Pyrameis atalanta* Linn.
150 *Junonia cœnia* Hub., common.
152 *Anartia jatrophæ* Linn.
155 *Eunica tatila* H. S., common.
157 *Timetes petreus* Cram., common.
165 *Limenitis floridensis* Streck.
177 *Anæa portia* Fab., common.
184 *Neonympha phocion* Fab., common.
246 *Calephelis cænius* Linn.
250 *Eumæus atala* Poey, common.
263 *Thecla melinus* Hub., common.
288 " *acis* Dru.

289 *Thecla cecrops* Fab., common.
290 " *columella* Fsb.
369 *Lycæna hanno* Stoll., cammon.
374 " *theonus* Luc., common.
379 *Pieris ilaire* Godt.
380 " *monuste* Linn., common.
398 *Catopsilia eubule* Linn., common.
402 *Catopsilia agarithe* Bd., common.
409 *Colias cæsonia* Stoll.
433 *Terias lisa* Bd.
454 *Papilio polyxenes* Fabr., common.
455 *Papilio troilus* Linn., common.
462 " *thoas* Linn., common.
467 *Ancyloxypha numitor* Fab., common.
495 *Pamphila attalus* Edw.
509 " *phylæus* Dru., com.
510 *Pamphila brettus* Bd. Lec., common.
519 " *cernes* Bd.-Lec.
526 " *loammi* Whitn.
531 " *maculata* Edw., common.
545 " *vitellius* Fabr.
549 " *palatka* Edw.
595 *Nisoniades petronius* Lint., common.
599 *Nisoniades nævius* Lint. ? common.
612 *Pholisora hayhurstii* Edw., common.
620 *Eudamus bathyllus* Sm.-Abb., common.
631 *Eudamus zestos* Hub.
633 " *proteus* Linn., common.
641 *Erycides amyntas* Fab., com.

Aside from the above mentioned species, may be mentioned the following which were collected during the winter months by Mr. Morgan Hebard : *Thecla telea*, *Thecla martialis*, *Eresia frisia*, *Colænis julia*, *Catopsilia statira*, *Anosia berenice* Var. *strigosa*, *Timetes eleuchea*, etc. Mr. Dickensen has also captured around Miami, *Timetes chiron*, as well as the majority of the species in the foregoing list. Mr. Morgan reports the capture of *Danais berenice* Var. *strigosa*, but I can't help doubting this capture, though many of my captures of *Danais berenice* approached this variety, but none sufficiently so to warrant me in referring the specimens to this interesting variety. *Timetes petreus*, as well as *Eunica tatila*, were common enough, but of the many specimens captured nearly all were in poor condition. *Neonympha phocion* differs from our northern examples, in the fact that the anterior wings are not as much produced, besides there are other characters which at once will enable the student to separate the southern specimens from the northern. In *Pamphila vitellius* we have a different species from *P. delaware*, although Dr. Skinner places the latter as a synonym of *P. vitellius*. In *vitellius* the anterior wings are more produced, and the heavy black veining of the wings, alone, is sufficient to distinguish from *P. delaware*.

The Plum Webbing Saw-fly.

By H. T. Fernald, Ph.D., Amherst, Mass.

On June 10, 1902 a letter was received at the Hatch (Mass.) Experiment Station, from Northampton, Mass., which stated that a plum tree in the garden of the writer was being seriously injured by some insect. Specimens sent with the letter showed that it was the work of a saw-fly larva, and that the branches were covered with a web somewhat resembling that of the fall web worm. An examination of the infested tree was at once made, and it was found that the larvæ were nearly full grown, and that the tree (about twelve feet high) was completely covered with webs. These differed from those of the fall web worm in their darker color and in the fact that the webs did not extend from one branch to another to any great degree, but followed the outline of each branch.

On June 26th the larvæ had all entered the ground, where they were found from four to eight inches beneath the surface, and many were so far from the trunk as to indicate that they had dropped or spun down from the branches rather than had crawled down.

Farther studies show that the larvæ burrow down in the earth to a distance of at least six inches from the surface to pass the winter, and that a short period of pupation in the spring is followed about the first of May by the appearance of the adults.

The adult insect agrees with the description of *Lyda rufipes* Marl., published in Bulletin 48, of the South Dakota Agricultural Experiment Station, April, 1896, and the brief account of the habits of that insect there given also agrees with what is here recorded. I learn that specimens of *Lyda rufipes* in the National Museum belong to the genus *Neurotoma*, where the Massachusetts specimens had been placed before Marlatt's description was found, and there can be no doubt that the two are identical. As Marlatt's description seems to have been generally overlooked, I include it in this paper.

During the spring of 1903 the plum webbing saw-fly has been raised and studied in all stages by Mr. E. A. Back, one of my students at the Massachusetts Agricultural College, and his descriptions follow :

Egg.—1.14 to 1.4 mm. long, .48 to .56 mm. in diameter; cylindrical with rounded ends ; smooth, lemon yellow before hatching ; empty shells opaque, white. Length of egg stage eight days.

The eggs are laid in clusters along the mid-rib of the newest leaves in a somewhat definite manner. Along the center of the mid-rib the female lays a row of eggs separated from each other by nearly half their length ; on each side of this she deposits another row, the eggs of which alternate with those of the first row. Close to, and outside of these there may be another row, or eggs may be scatteringly laid there. As the leaves expand, the eggs become separated by more than half their length. In the clusters noted, the number of eggs varied from two to forty-five. Egg-laying continues for about eight days.

First Larval Instar.—Length, 3 74 mm. ; width of head, .58 mm. ; body cylindrical, well annulated, greenish when first hatchod, later becoming yellowish white, glabrous. Head viewed from above globular, from the side oval, greenish yellow ; ocelli black ; antennæ black, .22 to .24 mm. long, obscurely seven-segmented, above and to the front of the ocelli ; clypæus quadrate, labium rounded, deeply notched ; three pairs of small thoracic legs present, prolegs absent ; a convoluted fold of skin of a lighter color extends along the sublateral surface, most prominent upon the abdominal segments ; at the posterior end of each fold, on the last segment, is an appendage .24 mm. long, black, three-segmented, and bearing a circlet of spines upon the distal portion of its first segment ; upon segment 13, on each side beneath the sublateral fold, is a rounded tubercle which appears to be an atrophied leg ; a narrow band, interrupted on each side by an oblique whitish line, on the dorsum of the second segment ; there is a spot at the base of each foot, a linear spot on the venter of segments 2, 3 and 4, a spot on the lower valve and the lateral edges, and a median spot bearing a spine on the upper valve of the cremaster—all dull black.

Upon hatching, the young larvæ spin a fine web for support, and then eat through the leaf close to the mid-rib and spin a loose web upon the upper surface, where they remain and feed, drawing the leaf into folds. As they grow larger they eat very rapidly and draw in new leaves as they need more food.

Second Larval Instar.—Length, 6.2 mm ; width of head, .82 mm. ; appearance as in the previous stage except as noted ; larva now very pale flesh-color, with a slight grayish reflection on the dorsum; head bright shining yellow; antennæ distinctly seven-segmented; the following areas are shining black—ocelli, antennæ, a large spot covering the dorsum of segment 2, a triangular spot below this on each side and another spot still lower, a small crescentic spot at upper side of base of each leg, an irregular line on each side between the head and prothoracic feet, a small spot between the two anterior pairs of feet, linear spots on the venter as in the previous instar, growing larger posteriorly, anal appendages, hinder border, two spots on the side and the median depression with the spine of the upper valve, together with a large quadrate spot notched anteriorly on the lower valve of the cremaster; sublateral fold distinctly yellow; tips of mandibles reddish brown.

Third Larval Instar.—Length, 13.1 mm.; width of head, 1.12 mm.; same as in the second instar, with the following exceptions: distal portions of antennal segments, legs and anal appendages more or less whitish; mandibles black at tips; spot on dorsum of segment 2 more trapezoidal, with its longest side posterior; two black spots, instead of one, below the triangular spot on the same segment, the anterior one much larger; a black spot on segment 3 behind the posterior angles of the trapezoidal spot and a trace of a spot lower down on the same segment; in general more nearly flesh-colored.

Fourth Larval Instar.—Length, 18 mm.; width of head, 1.7 mm.; diameter of body, 2.75 mm.; larva very fleshy; pigment beneath skin very pink, with steel-gray reflection on the dorsum; head shining yellow, clothed sparsely with white hairs; ocelli black, showing under a lens a white spot in the center; antennæ 1.32 mm. long, tapering, basal segment large, short, second, third and fifth sub equal, fourth nearly one-half the third in length, sixth and seventh together equal in length to the third; labrum, 1.02 wide; maxillary palpi four-segmented, .26 mm. long; labial palpi three-segmented, .24 mm. long, short, stout, tapering evenly; segment 4 annulate; the black markings on segments 2 and 3 have become larger and seem to form a continuous chitinous shield over the dorsum back of the head; linear spots between the legs on the venter interrupted by an indistinct whitish line which extends along the venter; a corresponding darker line extends along the dorsum, interrupted on the second segment by the trapezoidal spot; thoracic legs five-segmented, 1.34 mm. long, black, the distal portion of each segment whitish, as in the preceding instar, and bearing a circlet of spines; tubercles and subventral fold on segment 13 more pronounced, yellow; anal appendages now white in the middle, black at tip and base; median black spot of upper valve of cremaster absent, whole depression whitish; the stout spine rising from the center of this depression short and curved forward.

After about six days in this instar, the larva begins to turn greenish, becomes shorter, and finds its way to the ground, in which it forms a cell, where it remains till the latter part of the following March, when it pupates.

Pupa.—About 11 mm. long, 3 mm. in diameter; naked, and of a light green color. It is a "pupa libera," and in this form continues till about the first of May.

Adult (from Marlatt, Bull. 48 S. Dak. Expr. Sta., p. 17).—"Female. Length, 11 mm.; expanse 18 mm; robust, flattened; head very coarsely, rugosely punctured, thorax with more scattered and finer punctures, shiny; abdomen very finely shagreened; anterior tibiæ without side spur; cross vein of medium [median?] cell very rudimentary, scarcely projecting one-third width of cell; antennæ 21-jointed, third joint three times as long as fourth; claws rather deeply and finely notched; color black, shining; mandibles and legs for the most part reddish-yellow; extreme tip of posterior tibiæ and all tarsi, except base of metatarsal joint of fore and middle legs, brownish black; elongate spot on center of clypæus, spot at base of mandible, and at upper inner angle of compound eyes, together with the tegulæ and base of wings, whitish yellow; wings nearly hyaline, nervures, including stigma, dark brown, nearly black; a very slight smoky shade obscures outer half of both wings.

"Male agrees with female in structural and colorational features, but is about one-fifth smaller."

In forming their webs, the larvæ wriggle about half their length from the web already made, and by carrying the thread of silk back and forth, advance the nest to the next leaf. When the larvæ are few in number and nearly mature, each seems to have an individual web more closely woven than the main nest, into which it retreats when disturbed. When this occurs, the larvæ all stop feeding and emit a brownish fluid from their mouths.

The total length of the feeding period is from twenty-six to thirty days.

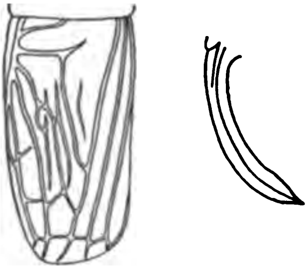
When the hibernating larvæ are about to pupate in March they first work their way up toward the surface, so that the pupæ are found just below the roots of the grass.

This paper is apparently the first record of the presence of this insect in the east, the only reference to it which I can find, except that where it was originally described, being by Dr. James Fletcher (Rept. of Ent. and Bot. Dominion Expr. Farms, for 1896, p. 253), where it is reported from Southern Manitoba, and by the same writer in Trans. Roy. Soc. Can., vol. v, sect. iv, p. 224, 1899.

During the spring of 1903 it has made its appearance on a few trees at Amherst (seven miles from Northampton), but no reports of its presence elsewhere have been received. When abundant, it may become a very serious pest to the plum-grower, as the trees attacked are defoliated just at the time when all their energy should be centered in the formation of the fruit.

* * *

This cut shows the structure of the musical apparatus of the male and the ovipositor of the female of *Falcicula*, a new genus of Gryllidæ described on page 258 of the Oct. NEWS. The species is *hebardi*, found by Mr. Morgan Hebard at Thomasville, Georgia.



* * *

DIXA CLAVULUS Williston—Diptera of St. Vincent, Trans. Ent. Soc. London, '96.—In a paper which recently appeared in the New York State Museum, Bulletin 68, p. 429, a description is given of a fly under the name of *Dixa modesta*. Unfortunately, in drawing up this description, Professor Williston's species was overlooked, and hence it was redescribed under another name.

Upon examination it will be seen that the two descriptions are quite similar, and I have also compared my specimens with a co-type of Williston's species collected by Mr. H. H. Smith, now in the Cornell University Collection and find them identical.

In fresh and in immature specimens the colors are paler or more yellowish than in mature, dried specimens. The rostrum in some specimens is dusky, in others paler. These paler specimens will find a place in the key given (p. 431 l. c.) in the second couplet with *marginala*, from which they may be distinguished by their dark thoracic stripes. The knob of the haltere is dusky.

The following misprints in the above mentioned paper are noted:

Page 41; line 13 For plate 44, fig 6, read pl. 44, fig. 5.

Page 429 line 3rd, from bottom of page. For fig. 10, read fig. 8—O. A. JOHANNSEN.

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and, as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form, will be given free, when they are wanted; and this should be so stated on the MS., along with the number desired. The receipt of all papers will be acknowledged.—ED.

PHILADELPHIA, PA., NOVEMBER, 1903.

We are pleased to see that there is a steady increase in the number of type-written manuscripts that come to the NEWS. We would like very much to make an inflexible rule that all articles sent to the NEWS must be type-written. Quite a number of authors are very careless in writing the names of insects. Because they know the names, they think every one should, and they put the work of translation on the editors. Not infrequently we have wished that we could have left the articles as the printer has set them up, as an object lesson. We are also greatly annoyed at the way some persons sign their names and write their addresses. They think that since they know their own name and where they live, every one else does. Type-written copy makes the compositor's work much easier and reduces the labor of proof reading. Even the signatures or names of persons should be type-written, and where necessary, they could also be hand-written. We not infrequently get letters and words in letters that are almost conducive to profanity. It is to be hoped that hand-writing will soon be a matter of the past, and the only thing left of it the signature of the person, where individuality or identity is necessary. We have some MS. on hand now that gives us "that tired feeling" and desire for a tonic of some kind when we try to read it. Sometimes we just shut our eyes and send it to the printer with a sigh.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

The mosquito doesn't believe in race suicide.

When the devil wants to take a rest he turns the mosquitoes loose.

The sluggard may go to the ant, but the mosquito will meet him more than half way.

MR. HENRY L. VIERECK is now at the Connecticut Agricultural College, New Haven, Connecticut, and all mail should be so addressed.

MR. A. G. WEEKS of Boston is hard at work getting into shape his magnificent illustrated work on the Lepidoptera. It will take several years to complete it.

ON PAGE 271, OCTOBER NEWS I read *C. (icindela)*, 4 *guttata* nov. var., and on page 273 *C. nigrita* nov. var. Now this method of publishing new varieties has recently become rather prevalent, and something should be said to check it. If the insect is a variety its name is necessarily a trinominal, as *Cicindela sexguttata* var. *quadriguttata*. To publish it as a binomial, as if it were a distinct species, is merely to create needless confusion. In bibliographical work one has to cite what appears in print, and this should not be misleading.—T. D. A COCKERELL, Colorado Springs, Colo.

THE Ichneumon fly, which is called by the book-learned professors a friendly insect, has been seen by practical orchardists to be the guilty fellow that stings the fruit and gives it the appearance of a pepper box. It destroyed the fruit of Austria and Hungary in Europe, and stung and injured the trees. Some of them were found dead with the stings in the twigs of the trees. Col. A. Harrington of Springfield, Mo., saw this (friendly) insect stinging his fruit, and he got the Moth Catcher and cleared them out and made fine fruit. So this so-called (friend) was seen by an orchardist, A. T. Warner, of Lawrenceville, Ill., stinging his fruit and ruined its commercial value this year, 1902.

Callidryas eubule in New Jersey and Pennsylvania.—While I have long known this species to be of regular occurrence on the coast of Cape May County, N. J., I had not until the present year observed it further north. During August and September, 1903, I spent some days in the pine barrens of New Jersey, and saw *Callidryas* repeatedly all the way from West Creek near the coast to Chatsworth on the N. J. Southern Railroad. Subsequently I found it rather common between Hammonton and Pleasant Mills, and saw several at Camden, and one at Whitings. On September 20th, one was also observed near the mouth of Darby creek, in Delaware County, Pa. I think it very likely that the species occurs regularly through the pine barren district, but possibly it is more abundant this season than usual.—WITMER STONE, Acad. Natural Sciences, Phila.

How long can yellow-jackets "hold their breath?" I found this summer that they could live under water an amazingly long time.

A yellow-jacket's nest the size of my head hung from a rafter in the barn and was evidently going to give trouble, as it was *populous*. At 8 o'clock one night I slipped a butterfly net up over the nest and pinched it shut, taking the nest and every wasp. I sunk the net and all in two feet of water, (the water tub), and my brother put a big flat stone on them to keep the net shut and them under water. At 7 o'clock the next morning we took them out. They seemed cold and uncomfortable, but could crawl, and would soon have been ready to do effective business had we not consigned the whole lot to the flames.

11 hours under water seems a pretty long time even for a yellow jacket.—C. A. THURSTON, Kingston, Pa.

SPHINGIDÆ collected with the assistance of Mr. Hagen, at Miami, Florida, during the latter part of April and the first week in May of 1901.

Enyo lugubris Linn., common; *Hemeroplanes pseudothyreus* Grote, only one specimen; *Amphion nessus* Cram., common; *Chærocampa tersa* Linn., common; *Thorates pergesa*, very common; *Darapsa porcus* Hbn., only one specimen; *Dilophonota obscura* Fab., not common; *Ancerγx alope* Dru., only two specimens; *Dilophonota caicus* Cram., only two specimens; *Protoparce carolina* Linn., only two specimens; *Protoparce cingulata* Fab., only three specimens.

Darapsa porcus has probably never been reported before from the United States of North America, while *Hemeroplanes pseudothyreus* has seldom been captured as far north as Florida.

Thorates pergesa was the commonest sphinx of the lot, and although it is not to be found in our latest check-list, yet Mrs. Slosson reported its occurrence in numbers several years ago.—PHILIP LAURENT.

"AGAIN, this past summer, Prof. F. H. Snow has led a collecting expedition into a country where no entomologist had preceded him. As in many a former excursion, Dr. Snow chose a field which from its remoteness and the difficulties and dangers attending its exploration, had been neglected by other scientists, and he has been richly rewarded for his enterprise by the splendid collection of insects secured.

"The party which left Lawrence, July 20th, consisted of Prof. F. H. Snow, Dr. Charles F. Adams, Mr. G. P. Mackenzie, of Kansas City, and Mr. Eugene Smith, of Topeka. They proceeded at once to southeast Arizona. The first stop was made at Congress Junction (Martinas), where they camped ten days in the heart of the great American desert. From this point they went by wagon 50 miles across the Cactus Plain to Bill William's Fork, a branch of the Colorado River. When they first reached the stream there was not a drop of water to be found. They had struck a place where the river disappears in the sand, after the fashion of the Arkansas. Three miles further down, however, they found both water and shade, and here they made their camp.

"The collecting work was highly successful, and as a result of the trip 15,000 specimens, all pinned and labelled, have been brought back. Of these many are species hitherto unknown. 'I should estimate that we have secured at least 50 to 100 species new to science,' Dr. Snow said when questioned on this point.

"The collection includes specimens from all the Orders. The tabulated list of the specimens secured is as follows: Coleoptera, beetles, 5,430; Diptera, flies, 4,500; Lepidoptera, butterflies and moths, 1.926; Hymenoptera, bees and wasps, 1,822; Orthoptera, grasshoppers and crickets, 550; Hemiptera, bugs, 232; Neuroptera, dragon flies, 169; a total of 14,629."

Entomological Literature.

THE ORTHOPTERA OF INDIANA. BY W. S. BLATCHLEY. From the 27th Annual Report of the Department of Geology and Natural Resources of Indiana, 1902, pp. 125-471. Author's Separates issued September 5, 1903, Indianapolis.

In presenting this work to the entomological world, Prof. Blatchley has supplied us with a model for future work along faunistic or state lines. A glance at the map on page 126 will show how thoroughly the state has been examined by the author, and a perusal of the systematic portion of the work will demonstrate how amply he has been rewarded in the extension of the range of many species, and the discovery of quite a few new forms

After a good preliminary chapter on the external structure of an Orthopterous type, the enemies of the order are treated at some length, and a rather exhaustive bibliography comprising two hundred and twenty-three titles precedes the descriptive catalogue.

The systematic portion of the work contains references to one hundred and forty-eight species, each of which is well described, and the life-history and period of abundance, as well as the distribution (both general and within the state) considered. The illustrations are good, the originals being especially interesting as many represent species never before figured. In all seven new species are described: *Ischnoptera intricata*, *Neotettix hancocki*, *Melanoplus morsei*, *Conocephalus bruneri*, *Nemobius confusus*, *Gryllus americanus* and *G. arenaceus*. Under the Forficulidæ no reference is made to Bormans and Krauss' recent work on that family, and in consequence *Forficula aculeata* is not placed in *Apterygida*. In working out, as far as his material permitted, the relationship of the species of roaches of the genus *Ischnoptera* and some of those usually placed under *Temnopteryx* and *Phyllodromia*, the author has given us by far the most thorough and pains-taking presentation of this knotty problem of sex correlation. The re-discovery of *Temnopteryx deropeltiformis* is a most interesting find, and is especially noteworthy, as both sexes have been secured.

In treating the genus *Stenobothrus* the author has overlooked the fact that this generic name is antedated by Fieber's *Chorthippus*. Regarding *Schistocerca rubiginosa* Prof. Blatchley says, "The mere fact that on one or two occasions, opposite sexes * * * and *alutacea* were found in copulation is no proof of their identity in species;" while on page 180 he states regarding another case, "While I have never taken the sexes *in coitu*, there is no doubt in my mind but that the female of *pennsylvanica* is the roach heretofore known as *Blatta* or *Phyllodromia borealis*." The inconsistency of these two statements is rather striking. There is no doubt that if Prof. Blatchley could examine the extensive series on which the synonymy of the two forms of *Schistocerca* was established, he would be convinced as to the identity of the two species."

The section of the work on the genus *Melanoplus* is remarkly good, among other things the rare *M. impudicus* being found plentiful in Gibson County.

Under the general range of several species of *Xiphidion* (*Xiphidium* Blatchley et auct.), a few records which considerably extend the range of the species to the east have been overlooked. A very interesting record is that of the southern *Miogryllus saussurei*, which was taken in several of the southern counties of the state. Some observations regarding the mating of *Œcanthus* (p. 452) and *Apithes* (p. 458) are of especial interest.

The systematic portion is supplemented by a short study of the life zones of the state, the characteristic vegetation of the Transition and Austroriparian regions being listed. This is fully in keeping with the high standard of the work, and is a phase of the subject which happily is not as much neglected by entomologists as formerly.—J. A. G. R.

Doings of Societies.

A meeting of the Entomological Society of Western Pennsylvania was held at Carnegie Museum, Pittsburg, Saturday, October 3rd. Ten members present. The families AGARISTIDAE to ARCTIIDAE were gone over and a list with data prepared of all species taken in Western Pennsylvania. The ARCTIIDAE to PSYCHIDAE are to be taken up at the next meeting. Mr. Engel exhibited a series of *Arctia vittata* reared from one female to show the different forms. *Vittata*, and varieties *radians* and *phalerata* were included. Geo. Krautwurm exhibited four different species of *Hydroecia* reared from pupae found in burdock stems. Raymond J. Pflaum was elected a member.

F. W. FRIDAY, *Secretary*.

The September meeting of the Newark Entomological Society was held on the 13th with President Angelman in the chair and nine members present.

Messrs. Bischoff and Stortz reported the captures of *Sphaeridium scarabeoides*, first part of September, generally distributed and common in fresh cow excrement; and 3 specimens of *Lixus jullichii* April 12th.

Mr. Buchholz the capture of *Moma fallax* at Paterson, N. J., May 10th, and a *Sphinx chersis* ♀ at Elizabeth, May 22nd.

Mr. Keller *Arzama vulnifica* in Passaic Co., August 29th.

Mr. Angelman spoke about having seen several specimens of *Catopsilia eubule* in and about Newark September 12-13th.

The October meeting of the Newark Entomological Society was held on the 12th with Vice-president Stortz in the chair and 12 members present.

Messrs. John Martin and J. D. Mayfield were elected to membership.

OTTO BUCHHOLZ, *Secretary*.

--

A meeting of the Entomological Section of the Academy of Natural Sciences of Philadelphia was held September 24th, Vice Director H. W. Wenzel presiding. Sixteen persons were present. The death of Prof. A. R. Grote was announced. Dr. Calvert exhibited Riker mounts of insects. He considered them the most convenient mounts for passing around to a class of students. Mr. Rehn exhibited a species of *Heteropteryx* remarkable for size and antigeny. He also exhibited specimens of walking-sticks from the island of Obi in the Moluccas representing probably the first collections from that place. He said they were the property of Mr. Morgan Hebard and doubtless represented a number of new species. Mr. Ilg exhibited Riker mounts of butterflies, some of them showing transformations. Mr. Fenninger exhibited a large unknown species of *Tipula* from Lehigh Gap, Pa. Dr. Skinner made some remarks on the genus *Nemos* and exhibited the three known North American species. The distribution of [illegible] was discussed. Mr. W. D. Kearfott was elected an Associate of the Section.

HENRY SKINNER, *Recorder*.

EXCHANGES.

Not Exceeding Three Lines Free to Subscribers.

☞ These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and only when necessary those at the top (being longest in) are discontinued.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of species to be limited to **twenty-five** for each sending; 2d, the sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly; 4th, All insects must be mounted. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2-cent stamp with all insects for return of names. **Please put date of capture and exact locality on each specimen.** Before sending insects for identification, read page 41, Vol. III. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Wanted.—Life histories in all orders of insects. Will pay cash or give exchange for same. Write what you have, and state lowest cash price.—Denton Bros., Wellesley, Mass.

Desirable Lepidoptera for exchange. Would like to receive lists of good species.—John Comstock, 1572 Ridge Ave., Evanston, Ill.

I will collect Lepidoptera, Coleoptera, Hymenoptera, Hemiptera of this locality, in exchange for Diurnal Ledidoptera of the United States, or named Diurnals of foreign countries. Write at once.—M. E. Hoag. D. D. S., Oakville, Iowa, U. S. A.

I will give Lepidoptera, publications or cash for Smith's "Monograph of the Sphingids," published in Vol. xv, Trans. Ent. Soc., 1888.—H. H. Newcomb, 35 Court Street, Boston.

Parnidæ.—Parnidæ of the world wanted. Will pay cash or give exchange. (Correspondence French, German or English).—William D. Richardson, Fredericksburg, Virginia.

Wanted.—ENT. NEWS, vol. viii, No. 6.—Louis H. Joutel, 164 E. 117th Street, New York City.

Arctians.—Living eggs or larvæ of any North American moths of the genus *Apantesis* wanted for purposes of studying preparatory stages. Will be glad to render help, if possible, as to wants of anyone assisting. Arthur Gibson, Cent Exp. Farm, Ottawa, Can.

N. A. Lepidoptera desired. Those willing to collect, in exchange for European specimens, please communicate with James McDunnough, care Wilson, 385 Gt. Western Rd., Glascow, Scot.

Lepidoptera.—I have *Paonias astylus*, *Chalænogramma jasminearum*, *Sphinx kalmiæ*, *plebeius* and other Sphingidæ of the Atlantic States for exchange for specimens not in my collection. Send lists.—Prof. Henry Wormsbacher, 122 Hutton St., Jersey City, N. J.

For Exchange.—Several thousand Colorado and Utah Lepidoptera in papers and pinned on small black pins. Will trade for a Winchester repeating take down shot gun in perfect condition.—Arthur J. Snyder, Belvidere, Illinois.

I have some very fine and rare exotic and native Lepidoptera to exchange for native pupæ and cocoons. Will also take Catocala and Sphinx on pins or in papers. Send small lists to Charles F. Timm, 131 Ralph St., Brooklyn, N. Y.

Wanted Cicindela scutellaris, pulchra, sexguttata, purpurea, formosa, latesignata, fulgida, and vulgaris (any varieties), in as large number as possible. Coleoptera from northern Illinois and Indiana for exchange. Will collect as directed from the fauna of northern Ill.—V. E. Shelford, 5715 Drexel Ave., Chicago, Ill.

I wish to exchange American and European Lepidoptera and Coleoptera for American insects for the season of 1903 I am also a preparator of larvæ.—Karl Haertel, 198 California St., Newton Mass.

Coleoptera.—Paleoxenus Dohrnii Horn exchanged for Elaterids and Buprestids of the U. S. not yet represented in my cabinet.—A. Fenyes, M.D., Pasadena, Cal.

Wanted—for cash—Transactions Am. Entom. Society, Vols. I.-XXVI.; Proc. Entom. Soc. Phila., Vols. I.-IV.; Entomologica Americana, Vol. IV.; Entomological News, Vols. I.-VI., XI., XII.; Canadian Entomologist, Vols. I.-XXXIII.; Riley's Missouri Reports; Fitch's New York Reports; Leconte & Horn's Rhyncophora; works and papers on Aphidæ. Send lists of any other standard entomological works.—E. Dwight Sanderson, College Station, Tex.

I have Beetles, Butterflies, Moths, Catocalæ, spread or in papers, from Illinois, to exchange for U. S. and exotics, or pupæ and cocoons.—A. Mares, 1671 W. 23rd St., Chicago, Ill.

American Coleoptera desired.—Will give Hungarian species in exchange.—Th. Gobyelmann, Jutegyar, Ujpest, near Budapest, Hungaria.

Exchange.—Would like to exchange Coleoptera from Austria for N. American. Correspondence German and French.—Otto Spicack, K. K. Postbeamtor, Sternberg, Mähren, Austria.

Rare Sphingidæ and Catocalæ wanted for cash or exchange.—Geo. J. Keller, 26 Monmouth St., Newark, N. J.

Will exchange California specimens, *Attacus ceanothi* cocoons, etc., for flies caught in other places that also inhabit California.—J. E. Cottle, 1020 Pacific Ave., San Francisco, Cal.

Will have in November, limited number of Porto Rican and Mexican cocoons to exchange. Ent. News, Vol. xiv, No 1 wanted.—J. H. Matthews. 1426 Toronto St., Phila., Pa.

Wanted eggs of *Argynnis diana*.—I. Ruston, 10 Carlton Road, Workshop, Nottinghamshire, England.

Wanted.—Lepidopterists desiring *Bembecia marginata* and var. *albicoma*, to send exchange lists of North American moths.—Henry Engel, Genl Delivery, Pittsburg, Pa.

I have a few specimens of *C. calleta* and *cinctus* to exchange for rare *sphinx* or pupæ of same.—W. T. Buxton, 153 Walnut St., Somerville, Mass.

Wanted for cash fertile eggs of *A. luna*, *S angulifera*, *H. io*, *E. imperialis*, *C. regalis*, also of all kinds Sphingids.—Ernst Jkheber, 118 N. Reservoir Street, Lancaster, Pa.

Wanted.—Complete files, with indexes, of American Entomologist and its successor, the American Entomologist and Botanist; also of Insect Life.—Chas. S. Davis, No. 1910 Fifth St N. W., Washington, D. C.

Wanted.—Cocoons of *A. luna*, *S. cynthia*, *Att promethea*, *Att Gloveri*, *Att cecropia*, *Hyper Io*, and *Eacles imperialis*. Will pay cash for a few of each.—Dr. Tillotson, 744 Clinton ave., Rochester, N. Y.

Gortynas wanted.—Good prices or exchange will be given for fine specimens of *albilunata*, *erepta*, *u-album juvenilis*, *medialis*, *senilistatia*, *cerina*, *speciosissima*, *verona*, *frigida*, *unimoda*, *angelica*, *insulidens*, *furcata*, *sauzælitæ*, *buffaloensis*.—H. H. Lyman, 384 St. Paul St., Montreal.

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Vol. XIV. No. 10

ENTOMOLOGICAL NEWS

Heteronotus vulnerans.

DECEMBER, 1903.

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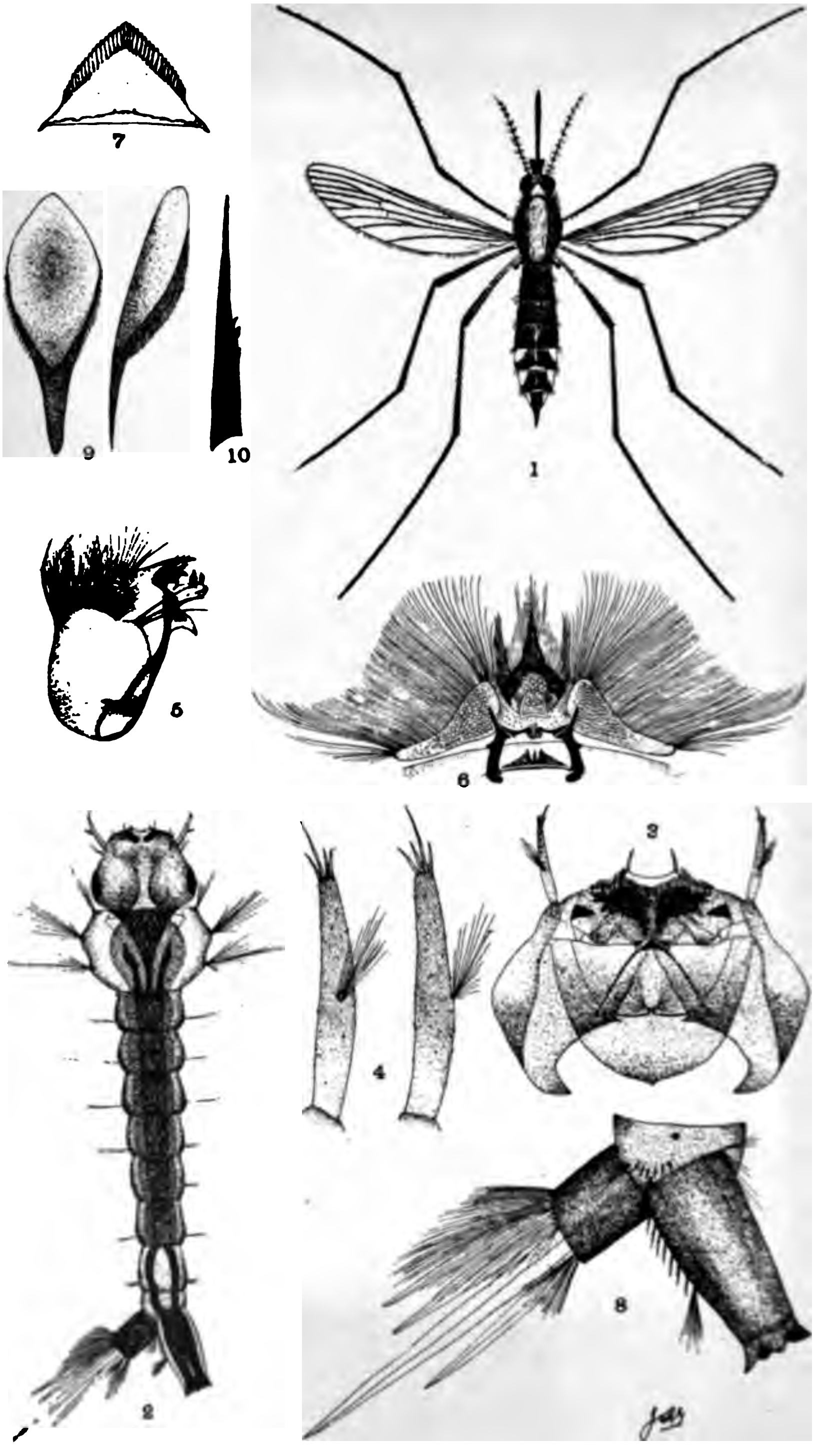

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ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

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Notes on Culex Serratus Theob., and its Early Stages.

By John B. Smith.

(With Plate XV.)

Culex serratus is a moderate-sized black mosquito, originally described from South America, and characterized by a silvery-white stripe through the middle of the thorax. The posterior segments of the abdomen are also white-marked laterally, the extent of the maculation and the number of segments involved varying somewhat. Figure 1 of plate xv represents a normal specimen.

The first inkling that this species occurred in New Jersey came when Mr. Clarence Van Duersen, an office assistant, was sent into a low swampy woodland near New Brunswick, July 29th, to collect whatever mosquito larvæ could be found there. Among other things, he brought back a robust blackish larva, conspicuous by a white-marked thoracic region and a white ring, comprising two abdominal segments, just before the anal siphon. These were at once separated out from the other forms as unknown, and with them were associated a number of pupæ that appeared to belong with them. From the pupæ

6 ♂ and 4 ♀ *serratus* emerged July 30th, and 5 ♀ emerged August 1st. Some of the larvæ pupated July 31st, and August 3d, 2 ♀ *serratus* emerged, so that the connection between the white-banded larva and *serratus* adults was fully established. The determination of the adult was suggested doubtfully by Mr. Dickerson and confirmed, independently, by Mr. D. W. Coquillett. August 13th another lot of mixed larvæ and pupæ were brought in. One full-grown larva was isolated and pupated a few minutes later, leaving a larval skin which was mounted in balsam. Adult from this pupa issued August 19th—a six-day pupal period. Other adults from the mixed lot of pupæ emerged August 15th,—6 ♂ and 1 ♀.

A few larvæ were collected September 3d, and then the pools dried up: adults were taken in the woods, near the dried-up pools, September 14th. Rain having filled the pools soon after, another collection was made September 30th, containing larvæ and pupæ. Adults emerged: 2 ♂, 1 ♀, October 3d: 7 ♂, 9 ♀, October 5th.

While collecting in the woodland pools of the Great Piece Meadow, an extensive Swamp area bordering the Passaic River, Mr. John Grossbeck took *serratus* larvæ, full and half grown, September 9th and 10th. Pupation began September 12th, and the first adult emerged September 17th. Others emerged September 21st, before the culture was closed. Another lot of mixed pupæ was taken September 11th, and 7 ♂ and 1 ♀ *serratus* emerged during the two days following.

During early September, Mr. Henry L. Viereck took adult *serratus* at Cape May Point, but did not find the larvæ.

The species therefore ranges the full length of the State of New Jersey, probably breeding nearly or quite always in temporary woodland pools, while the adults rarely leave the vicinity of the places that gave them birth. It is certain that I never received any with the miscellaneous lot of material collected near and in towns and villages.

The larva is well shown by figure 2, and is 6–7 mm. in length excluding the anal siphon. The head is dark brown, widest at the eyes, tapering anteriorly and somewhat flattened in front. Antennæ not quite half the length of the head, thickest at the basal third, and terminated by four articulated spines, one of which is much longer than the others. A tuft of hair issues from a tubercle at about half its length from base. Details of the head structure are shown at figures 3, 4, 5, 6 and 7, and all these are drawn from a cast larval skin. The antennae (figure 4) are consequently a little stouter than normal, and the maxillary structures at 6 rather more widely spread. The mandible at 5 and mentum at 7 are accurate. The hair of maxillary fans is simple.

The thorax is angular, wider than long, color white with a median black portion becoming wide anteriorly. Abdomen blackish except segments 7 and 8, which are white. Anal segment and siphon black. The siphon is just about twice as long as wide, is a little dilated before the middle, and has the valves a little dilated, so as to flare the tip. Figure 2 is more accurate as to proportion: figure 8 is from a cast skin and, being flattened out, is a little broader than natural. The anal gills are long and slender, pointed at tip, without obvious tracheæ. The two rows of spines on the siphon consist of seven each, essentially like figure 10, though there is a little variation. The patch on the eighth segment consists of five scales on each side, shaped as in figure 9 and arranged as shown in figure 8.

So characteristic is this larva in appearance that it would seem to be difficult to mistake it. The pupa has not been studied.

A New Saturnia from North America.

BY RODRIGUES OTTOLENGUI.

Saturnia (**Agapema** Neum. and Dyar) **anona** sp. nov.

Male—Antennæ brown, of a slightly orange tinge Thorax and body rich dark brown. Fore wings the same, slightly lighter. Basal line white, wide, angulated, inclosing a brown base. This line may be clear and clean, or it may be produced on the veins as white lines extending from it across to the median white band. Again the white veins may be only two in number, forming a white > of which the apex touches the angle of the line while the ends cross the median space and touch the median white band, the upper one just in contact with the ocellus. A median white band crosses from near the apex to the center of the hind margin, passing around and touching the ocellus. Where the band passes the ocellus there may be a white spur extending from the band just above and around the ocellus for a brief distance, or the white may be produced along the vein at this point thus inclosing a brown spot between the white and the corner of the ocellus. There is a subterminal band of white, clear cut along both edges and distinct against the brown field, which latter shows beyond it as a brown margin to the wing, in some specimens very slightly tinged with a paler shade. Between the median and subterminal bands there is an almost invisible waving fine line. Indeed it is probable that this line occurs only on the under side and shows through. On the discal nervure there is a conspicuous round ocellus with a slightly hyaline central streak. The outer border of the ocellus is black, inclosing a narrow circle of orange and outwardly a bluish crescent. Apically there is a blackish blotch and a crimson dash, these marks however apparently having no specific value. Secondaries: basal two-thirds tinged with white making the basal area very much lighter; this area terminates against the outer brown portion of the wing in a series of scallops, one between each pair of veins. Again we have the clear cut subterminal white band leaving the outer margin brown. Within the basal area an ocellus similar to the forewing but smaller.

On the reverse all the wings show more white, and the transverse invisible lines now show as conspicuous fine scalloped white lines. On the secondaries the cell is more or less completely outlined in brown.

Females.—Ornamentation as in the male. All four wings more nearly unicolorous, the basal area in the secondaries, however, being distinctly paler than the outer third. The basal and median bands are paler than in the male, but the subterminal white bands are as bright. The basal band in the forewing is faint, yet shows the same tendency to be produced along the veins. In the secondaries the basal area being browner than in the male the basal and median bands show, the latter being clean instead of scalloped as in the male. The antennæ are bright orange.

Males expand about 50 mm. Females about 60 mm.

Described from three males and three females I have affixed type labels to one male and one female in the collection of the Brooklyn Institute Museum. In these the basal and median lines are not connected. Type labels are also on one male and one female in the collection of Mr. Jacob Doll. In these the veins between the two bands show white.

Habitat Arizona.

The above described species is to be found in many cabinets carrying the specific name *galbina*. Recently, however, Mr. Jacob Doll has captured a large series of the true *galbina* in

Texas. The two forms being quite distinct, it became necessary to determine which was *galbina* and which new. The species has been described at least three times. First by Clemens (Proc. Acad. Nat. Sci. Phila., Vol. 12, 1860 P. 156) and subsequently by Strecker, and again by Neumoegen and Dyar. The original description by Clemens, (probably as Strecker guessed, from a female only) is quite inadequate, characters which are carefully noted having no specific value, while what now prove to be specific characters are indifferently mentioned or else omitted. Two features of the description, however, serve to determine the true species. We are told that "the marginal portion of the wing is whitish and is tinged on the terminal edge with pale yellow." This is true of both sexes in over a hundred specimens taken by Mr. Doll in Texas, the habitat by the way of the specimen from which Clemens wrote his description. In the new species, *anona*, the subterminal white is a distinct band, clean cut on the outer edge, not scalloped as in *galbina*, and the extreme outer margin is brown, as dark as the basal color, not buff or lighter as in *galbina*.

The other point, is not so good, yet may be considered. The original author says of the hind wings, "Hind wings similar in color and ornamentation to the fore wings." This is true of the form taken by Mr. Doll, alluding of course to a female. In *anona* the basal two-thirds of the secondaries, even of the female, is so much lighter that it could scarcely have escaped the attention of the writer.

Strecker mentions the species, *galbina*, and figures both sexes. His specimens were from Texas, and his figures resemble those taken by Mr. Doll. He for the first time describes the male and, while brief, his description fixes the species absolutely.

In Neumoegen and Dyar's N. A. Bombycidæ (P. 125) the species is described under the generic reference *Agapema*. It seems probable, partly from the fact that the true *galbina* was not in the Neumœgen collection, and partly because of one feature of the description, these authors used two of the identical specimens now before me. They mention "basal line angular, produced on the veins in the male, etc." This is exactly true of *anona*, but in the male of *galbina* there is not really a basal white line or band, but rather the whole base is white, outlined by a brownish angular line.

It remains only for me to point out the differences which easily distinguish the two species. In *anona* the antennæ of male is brown and of female, bright orange. In *galbina* both male and female have pale orange antennæ. In the male of *anona* the brown color predominates; in *galbina* there is more white. In *anona* the white median band in the male touches or even partly surrounds the ocellus; in *galbina* the white band is separated from the ocellus by a streak of brown. In the secondaries of the male, in *anona* the basal area where it touches the outer third of brown (crossed by a white band) forms a gently curved line, corresponding with the median band in the same situation in the female. In *galbina* this band is more easily seen even though the base is whiter, and it has a sharp bend or angle which considerably narrows the brown. But the dominant feature in both sexes is that *galbina* has a pale or yellowish (buff) margin to all four wings, while *anona* shows a well defined brown outer margin. The females of the two species are more similar than the males, but *galbina* has the base of the secondaries practically the same color as the outer third, while in *anona* the base is conspicuously lighter.

* * *

Note on Phasmidae.

By A. N. Caudell, Washington, D. C.

My friend, Mr. Rehn, of Philadelphia, has called my attention to the establishment of the phasmid genus *Leptynia* by Pantel in 1890, with *Bacillus hispanica* Bol. as type. This genus would invalidate my recently described *Parabacillus* had I correctly referred *B. hispanica* to it; but, in doing that, I seem to have been in error. While in general these genera are very close, the antennal characters will suffice to separate the Old World *Leptynia* from the New World *Parabacillus*. In the former the antennæ are distinctly segmented, and have from 15 to 17 segments in the male and 11 to 17 in the female; while in the latter they are very indistinctly segmented, except the first and second segments, and are composed of but seven segments in either sex, the segments beyond the second often so closely connate as to form a single inarticulate club.

A free translation of Pantel's Latin description of the antennæ of *Leptynia* is as follows:

"Male.—Antennæ about one-third as long as the anterior femora, heterogeneous, the second segment no less transverse than in *Bacillus*. The rest of the segments up to the middle of the antennæ notably elongate, the following ones abbreviated. Near the apex, each segment is distinctly transverse. The apical segment either longer than the three preceding ones or of equal length with them.

"Female.—Antennæ short, heterogeneous, segments one, three and five and the apical ones much longer than wide, the rest notably transverse; the apical segment at least equal to the four preceding ones."

In *Parabacillus* the antennæ are variable in length, but usually about the same as in *Leptynia*, apparently composed of seven segments, though those beyond the second are more or less coalesced, often altogether invisibly joined, forming a single club. In the more distinctly segmented specimens the various segments may be comparatively described as follows:

Male.—First segment large, much broader than the rest, about four times longer than wide, flattened, keeled above; 2, distinct, transverse, one-fourth as long as 1; 3, 4, 5 and 6 subequal in length, each as long or a little longer than 1 and 2 together; 7, nearly twice as long as the preceding one, concave on the inner side and sometimes showing very slight indication of being composed of two segments.

Female.—In general, the antennæ are similar to those of the male, but are usually comparatively shorter. Segments 1 and 2 as in the male; 3, equal to 1 and 2 in length; 4, one-half as long as 3; 5 and 6 subequal, each about two-thirds as long as 3; 7, variable, sometimes twice as long as the preceding one and sometimes about equalling it in length. The segments of both sexes are very variable in comparative lengths and generally very obscure, usually scarcely capable of being distinguished, except the first two, which are very conspicuously separated from each other and from the rest of the antennæ.

Diapheromera arizonensis Caud.

An immature female specimen from Madera Canyon, St. Rita Mountains, Arizona, taken by Mr. E. A. Schwarz in June, 1898, is referred to this species. This species shows cerci similar to those of *Diapheromera femorata*, and not long and slender, as in *D. veliei*.

Timema californica Scudd.

On June 9 to 16 of the present year, Mr. H. S. Barber beat this species in some numbers from fir trees in Humboldt County, California, at an altitude of about 1,400 ft. Of the nineteen specimens taken, not one was a male. The males may have clung more tenaciously to the trees, and thus escaped capture, or they may be much scarcer than the females. Mr. Barber states that the living insect is green, like the fir leaves, which they mimic so closely as to be scarcely discernible so long as they remain motionless, which they do for some time after being beaten off the tree into the beating net. They were taken from the lower branches of a clump of large trees, which stood somewhat apart from denser woodland.

Anisomorpha ferruginea Palisot de Beauvois.

My record of this species from Pennsylvania in my recent paper on the Phasmidæ (Proc. U. S. Nat. Mus., xxvi, p. 882) is probably erroneous. The label on the specimens reads "Tallulah, Pa." As no locality of this name exists in the above-mentioned State, Georgia or Louisiana is no doubt intended, as Tallulah occurs in both States.

* * *

A Method of Collecting.

By F. M. McElfresh, Salem, Oregon.

While enjoying a few days' rest, I wish to tell the readers of the Entomological News about one method of collecting, which I have never seen mentioned elsewhere. This unique method of collecting may be followed here in Oregon, and I presume in any mountainous region where large bodies of snow may be found during the summer.

To any lover of nature, especially to one who has been reared in the flat prairies of the Middle West, the Pacific Northwest is a veritable paradise, with its scenery—grander and more picturesque than words can describe. From almost any opening or slight elevation in the Willamette Valley may be seen, towering above the soft, deep blue of the main Cascade Range, from one to six pinnacles of spotless white upon a background of Italian blue. The average height of the Cascades is between 3,000 and 4,000 ft., while the snow caps reach a height of from 8,000 to nearly 12,000 ft. Mount Hood, which is 11,931 ft. high, is the largest peak in Oregon and the one best known to tourists, as it is only about 60 miles from Portland, and is more accessible than the others. Unfortunately, at certain seasons the panoramic view of the mountains is hidden—by clouds in the winter months, and by smoke and dust during the late summer and fall; during which seasons the majority of tourists visit this region. The base of the Cascade Range is but a few hundred feet above sea level; so that these peaks may not be as high in altitude as the Rockies, which start from a base several thousand feet above sea level, yet these peaks of the Cascades are practically as large as any in the Rockies, and the slight isolation of each snow cap makes them much more picturesque.

It has been my good fortune to make two hurried trips to Mount Hood, including three ascents to the summit. Both trips were made in July, which is the best time for climbing, although the guides take parties up until into September. The distance from timber line [which is usually snow line in midsummer] to the summit is between four and five miles, the first three of which lead up a very easy incline, almost to the bare rocks kept warm by the steam from the small crater (?) After one walks a short distance over the snow fields, one notices numerous small pits in the snow, which at first appear to contain particles of dirt or pieces of bark. Upon closer observation, the bits of bark turn out to be beetles or some other insect. Further search will disclose numerous representatives of nearly every order, with Coleoptera and Hymenoptera in the lead, although the Neuroptera are represented by numerous specimens of *Chrysopa* and allied genera. Insects were found on the surface and to the depth of five or six inches in the pits, and more than likely extend down into the solid glacial ice. Evidently, flying insects are carried upward over the snow by the strong winds which frequently sweep up the mountain side. As the insects become chilled, they drop to the snow, where they die; although they remain numb for some time, and occasionally the warm noonday sun will revive them, as was shown by an occasional beetle, whereas spiders seemed quite lively. During the summer months the surface of the snow fields becomes soft in the midday sun; and, since the bodies of insects are opaque, they absorb more heat than the surrounding snow, and hence the snow immediately beneath them melts more rapidly, eventually burying the insect. On one trip a sparrow and a plover were found frozen. The guide stated that some years the mountain side would be covered with frozen grasshoppers:—I presume some migratory species which occur on the eastern side of the mountains. In some seasons, portions of the rock at the very summit become bare, and I was told they were frequently almost covered with butterflies. In connection with this I might state that reliable parties told me that, upon climbing a small butte about 2,000 ft. high, here in the valley in the month of October, they found the top of the butte covered with millions of Coccinellids. This suggests that mountain tops might be useful factors in studying migrations of insects.

Beside the collecting on the snow fields, this mountain affords magnificent collecting at lower elevations, it being best along the banks of the many mountain brooks. The dead timber in the higher altitudes showed very few insects, although one would expect to find hosts of Cerambycids. The insect which appeared in its native haunts at the highest altitude was a species of ant. Colonies were found on small moraines completely surrounded by snow, which probably retreated later in the season. Doubtless, a study of the insect fauna would show many species peculiar to each peak, or possibly only on one or two peaks, as is indicated by the work which has been done in botany upon Mount Rainier of Washington and some of the other neighboring mountains. The fact is, there are hundreds of undescribed insects to be found here in the Northwest, for even the valley fauna is far from being thoroughly known.

There are two Alpine clubs on the Pacific coast—the Mazamas of Portland, Ore., and the Sierra Club of San Francisco. Either of these clubs will gladly take any visitors who may wish to accompany them on their annual outings.

Collecting in Mexico.

By M. E. Hoag, D.D.S., Wapello, Iowa.

I recently returned from a three months' trip to Old Mexico, and will try to give some idea of the country I visited and the material to be had there.

At present writing I cannot make a complete list of all the species taken on the trip, but will do so as soon as possible.

The country to the south and east of Altamira, Mexico, is low and wet, while north and west it is rolling and covered with timber consisting of oak, chijol, mesquite, mahogany and undergrowth. At short intervals there are small parks or open spaces, and here are found a few flowering shrubs and creepers, but they seem to have very little attraction for butterflies or other insects.

A good collector in the north is not supposed to chase specimens, but if you wish to catch anything in the part of the country I visited, you will have to get a move on, for there is a stiff Gulf breeze, and everything seems to drift with this at a very fast gait. It is but seldom that one is fortunate enough to take anything sitting.

It is almost impossible to do any collecting in the woods, for the undergrowth is so dense that one can hardly force a way through, and it is impossible to use a net. Besides, if you get into the brush, you are sure to get covered with thousands of *Pinolias* and *Garopatas*, or woodticks. I believe they are all the same, only in different stages of development. The *Pinolias* are very small and can hardly be seen, while the *Garopatas* are full size and full of business.

When I first reached Altamira, June 20th, there were very few species of Lepidoptera to be had, for the rainy season had just begun. The species mostly taken were: *Danais berenice* and *strigosa*, *Heliconius telchinia* and *charitonia*, *Eunides zorcaon*, *Colænis julia* and *delila*, *Agraulis juno* and *vanillæ*, *Anartia fatima* and *jatrophæ*, *Myscelia ethusa*, *Ageronia ferentina* and *feronia*, *Cystineura amymone*, *Eurema perimede*, *albula*, *jucunda*, *delia* and *nicippe*, *Pieris monuste*, *protodice*, *amyrillis* and *viardii*, *Catopsilia philea*, *agarithe*, *argante*, *eubule* and *sennæ*, *Nathalis iole*, *Papilio montezuma* and *cresphontes*, *Kricogonia lyside* and *terissa*.

I took also a number of moths that I have as yet been unable to identify, but I noted all during the trip that Moths, Sphingidæ, Diptera, and Coleoptera were very scarce. Of *Catocala* I took none. Odonata were fairly plentiful here, and I took a good number of species. Hymenoptera were fairly represented, and there was a fair number of Coleoptera, but they were mostly of small species. Orthoptera were not well represented, and of Plecoptera I took none at all, although I made special effort to do so.

Scorpions, called by the Mexicans Carraballos, and the Whip-tails, called Vinagrios and greatly dreaded, were very plentiful.

I was taken with the yellow fever the first of July, and was confined to the house for several weeks, and during this time we had very heavy rains, and as a result there was a great increase in the number of species by the time I was able to be outdoors again.

On July 15th I saw the first *Victorina stenele*, and in a day or so *Gonopteryx clorinde* and *mærula*, besides several species of *Papilio*.

I made one trip to the woods north of Altamira, after my sickness, and took numbers of *K. lyside* and *terissa*, and *Gon. clorinde* and *mærula*. *Kricogonia* have a habit of sitting on the under side of leaves, and unless disturbed will escape the collector, but after getting on to their ways they can be taken by hundreds. *Ageronia* also have a habit of sitting on lichen-covered trees, and are very hard to see at a distance of only a few feet.

I left Altamira the latter part of July, and started for San Luis Potosi, by way of Tampico. After leaving Tampico the road passes through low-lying country, grown to small timber and brush. In this part of the country there is a great abundance of flowers, and here I saw more specimens than during any other part of the trip. The species were *mostly* confined to the commoner ones, but there *were* some fine *Papilio* and other species. As the train would pass a water-hole the " flies " would rise in great clouds and beat against the car-windows.

As the road gradually reached higher ground, the vegetation and insect-life became more and more scarce until, at an altitude of 5000 feet, only a few Hesperidæ and other small, hardy "flies" were to be found. On the way up Rascon Mountain I saw one *Ithomia* and one *Morpho*, the only ones seen on the trip.

At San Luis Potosi there is very little to be had of entomological interest, and what there is is confined to the plazas, and the fields close to the irrigation ditches that come to the city from the dam situated some six miles to the west.

Here I took a number of *Papilio daunus*, *cresphontes* and *philenor*, and a few *Lycæna*, besides a good number of Odonata and a few Hymenoptera.

At a siding on the Mexico Central Railway, about fifty miles east of San Luis Potosi, there is a small valley that evidently gets a large supply of rain, and here I took a large number of *Papilio*, *Eurema mexicana* and a number of other " flies " not yet identified, besides a large number of species of Orthoptera and a few Odonata.

I left San Luis Potosi the last of August and went to Saltillo over the Mexican National Railway, but aside from a wreck, the trip was devoid of interest, for the road passes through a high table-land that is dry and barren.

From Saltillo I went southwest about 130 kilometers to the mining town of Concepcion del Oro, and there took mules, and in company with Mr. Ludwig Heldt, mining engineer for the Mazipil Copper Company, went over the range to San Pedro del O'Compo and back to Concepcion by the foot of the mountains.

The trail from Concepcion is one of the most picturesque, and at the same time one of the most dangerous that I have ever crossed. In many places the trail is cut from the solid wall of granite, and one can look down hundreds of feet to the bottom of the cañons, and wonder how much there would be left to send home if the mule should make a misstep. The day was Sunday, and we met numbers of Peons with the whole family of children mounted on the one burro, going to town, there to spend and gamble away the whole of a week's wages. Occasionally a game-cock would be added to the rest of the load.

About noon we reached the top of the range, 10,000 feet, and were well repaid for the long, hard ride, for the view was grand beyond description. After a short rest, we started on the down trip, and reached the foot-hills about 2 P.M. Passing down an arroya, or cañon, we came to a fine spring of water, and stopped here for rest and lunch. In this dry waterway I saw a species of *Limenitis* that I was unable to take or identify, but aside from this there were very few specimens of interest to be seen on the mountains. The rest of the journey was through a barren cactus country.

After returning to Saltillo, I started for the States by way of Monterey, Eagle Pass, San Antonio and Kansas City.

On the down trip through Texas, Oklahoma, and the Territory, there was a great abundance of fine specimens to be seen along the track; but going back, everything had given up to the dry, hot weather, and there was nothing of interest.

The planters in Texas and the cotton country were feeling like "Jonah in the whale," for the boll weevil was at its worst, and the crop would be cut short by several hundred thousand bales.

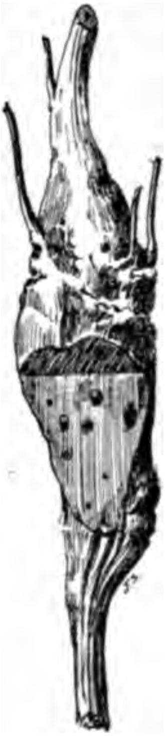
As soon as I can collect my data, I will send in a list of all species taken on the trip.

A New Species of Gall-Wasp (Cynipidae) from Goldenrod (Solidago).

By A. ARSENE GIRAULT, Virg. Poly. Inst.

Aulacidea solidaginis Girlt. sp. n.

Description of Gall.—Large, irregular, curved, or knotted swellings of the stems; rough, surface generally bearing aborted growths; interior pithy, slate blue; tasteless; multicellular, the larval-cells large, and smooth interiorly. Length, varies; 5.5–10, 5 cm. Thickness, 1.6–2, 1 cm., through greatest diameter. Locality, Blacksburg, Virginia.



Described from 3 specimens.

These galls were collected during the winter, the adults emerging from June 2-8, 1903.

They are easily distinguished from the Lepidopterous (*Gelechia gallæ solidaginis*) and dipterous (*Trypeta polita*, *T. solidaginis*) galls occurring on Goldenrod. The galls of *Gelechia* are smaller, and hollow; those of *Trypeta* globular or long, pithy, and containing but one or two larval cells.

Description of Adults.—Female: length of body 2.8, 3.40 mm. Head and thorax black, rugose; face with a single median carina; mandibles tipped with black; abdomen glabrous, dark brownish, darker caudad, microscopically punctate; hypopygium blunt, the ventral spine long and prominent; legs rugose, or roughly striate, unicolored with antennæ, which are lighter than abdomen; venation prominent, dark; antennal joints cylindrical oval, 1 curved, sub-cuneate, equal to 3, 4, 5, 6 and 7, 2 smallest, cuneate, 8, 9, 10, 11 and 12 sub-equal, smaller than preceding joints, excepting second, sub-parallel; 1, 2 and basal one-third of 3, black with some brown, succeeding joints brownish, coarsely striate; 1 and 2 punctately sculptured; antennæ, 13-14 jointed, distal joint as long as preceding two combined (13-jointed), varying in length, equal to preceding joints (14-jointed).

Described from 29 specimens.

Male.—Length of body, 2, 2.95 mm. About same as female. Color basal joints of antennæ more variable, in the smallest specimen pitch black, in the larger specimens black-brown, varying to color of succeeding joints; abdomen darker; face with prominent median carina.

Antennial joints cylindrical oval, 1 and 2 at least darker than succeeding joints; 1 and 3 swollen at distal end; antennæ, 14-jointed.

Described from 13 specimens.

42 specimens: 13 ♂'s, 29 ♀'s.

Resembles *Rhodites* and *Diastrophus*, but differs from the former in having the marginal cell open, antennæ of male 14-jointed, hypopygium blunt, and ventral spine very long; from *Diastrophus*, in having claws apparently entire, and mesothorax not polished, but rugose. Naturally falls into Ashmead's new tribe, *Aulacini*, occurring in galls on *Compositæ*, and thus easily separated from the foregoing genera.

Parasites numerous, mostly of the Chalcid genus *Eurytoma*.

I am indebted to Mr. Wm. H. Ashmead, U. S. N. M., for information bearing on this species, and for confirmation of its generic position; also for determination of some of its parasites.

Credit is due also to Mr. J. F. Strauss, Blacksburg, Virginia, for the figure.

A New Ephydridid from Australia.

By D. W. Coquillett.

Hydrellia tritici n. sp

Head black, the face, cheeks and lower part of occiput white pruinose, a row of four bristles on lower part of each side of face and the adjoining cheek, antennæ and palpi black, proboscis brown; thorax and scutellum greenish black, mesonotum not pruinose, two pairs of dorsocentral bristles, the hairs between them arranged in two rows, a velvet-black spot above insertion of each wing, pleura and metanotum, except lower edge of the latter, white pruinose; abdomen bronze-green; legs, including the coxæ yellow, the front ones, except their coxæ and bases of their femora, black; wings hyaline, apex of second vein nearly three times as far from apex of first as from that of the third; halteres yellow. Length, 2 mm.

Perth, Western Australia. A specimen, bred from a wheat plant, received from the Acting Director of Agriculture. Also three specimens from Mittagong, Australia, received from Mr. W. W. Froggatt. Type, No. 7,003, U. S. National Museum.

Notes and Remarks on North American Blattidae, Mantidae and Phasmidae,

With a Catalogue of the Forficulidae, Blattidae, Mantidae and Phasmidae Recorded from Texas.

By James A. G. Rehn.

The following records, unless otherwise stated, are based on material in the collection of the Academy of Natural Sciences of Philadelphia.

BLATTIDÆ.

Ischnoptera bolliana Saussure and Zehntner.

Shovel Mount, Burnet Co., Texas; June 21 and July 25, 1901 (Schaupp). Two males.

Round Mountain, Blanco Co., Texas (Schaupp). Two males.

The specimens from Round Mountain belong to the form with the median streak of dull yellowish on the pronotum.

Ischnoptera hyalina Scudder.

This species was based on one male specimen in the collection of the American Entomological Society, which is still extant, though minus the abdomen. As the original description is rather poor, the following remarks may prove of some service.

Size large (for the genus); form slender, elongate. Head with the interspace between the eyes greater than that between the ocelli; eyes very elongate pyriform, the apex posteriorly; ocelli large, touching the eyes; antennæ filiform, equal to the apex of the tegmina in length, very closely and finely hirsute, third joint not half the length of the first. Pronotum slightly transverse; anterior margin truncate; the posterior subtruncate, a very slight and very obtuse median angle; lateral margins and angles rounded; lateral portions considerably depressed, disk slightly impressed. Tegmina elongate; sutural and apical and median thirds of the costal margin subparallel, apex evenly rounded; basal field equal to about one fourth the length of the tegmina; anal field elongate ovoid in shape. Anterior femora with three large apical, five median, and an intervening series of very fine spines present on the anterior margin, posterior margin with five spines, no genicular spine present; tibiæ about three-fourths the length of the femora; tarsi equal to the femora in length, the metatarsi slightly exceeding the apical joint in length. Median femora with six apical and median spines on the anterior margin, posterior margin with the same number, genicular spine very long and slender; tibiæ about equal to the femora in length. Posterior femora with four spines on the apical half of the anterior margin; posterior margin with five spines on the apical half, genicular spine normally present;* tibiæ half again as long as the femora; tarsi about equal to the femora in length, metatarsi exceeding the remaining joints in length, arolia rather minute.

The color description given in the original is very good and describes the insect perfectly.

Habitat—Delaware.

MEASUREMENTS.

Total length,	25. mm.
" Length of pronotum,	4 25 mm "
" Breadth of pronotum,	6. mm."
" Length of antennæ,	25. mm."
" Length of tegmina,	21.5 mm."
Greatest width of tegmina,	6.25 mm.

This species is more closely related to *I. pennsylvanica* (De Geer) than any of the other species examined. It can be immediately distinguished by the larger size, different coloration and more longitudinal pronotum. Close relationship also exists with *I. uhleriana* Saussure, but the latter is a much smaller species, with a rugulose interocular region and a differently shaped basal field of the tegmina. It is quite possible that this species is the male of *Temnopteryx major* Saussure and Zehntner. Blatchley† has recorded the capture of males of *major*, and the type of *hyalina* agrees very well with his description. If such should prove to be the case, *major* must fall as a synonym of Scudder's species.

Ischnoptera uhleriana Saussure.

Shovel Mount, Burnet Co., Texas; July 7 and 10, 1901 (Schaupp). Two males.

Round Mountain, Blanco Co., Texas (Schaupp). Two males.

Ischnoptera unicolor (Scudder).

Boykins, Southampton Co., Va. (C. W. Johnson). One male.

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* In the type both are absent, though this condition is seen to be accidental.

† The Orthoptera of Indiana, p. 183.

Ischnoptera pennsylvanica (De Geer).

Virginia. One female.

Lehigh Gap, Northampton Co., Pa.; July 24, 1903 (Rehn). One female.

I fully agree with Blatchley* as to the identity of *Phyllodromia borealis* and this species.

Eurycotis floridana (Walker).

Miami, Dade Co., Florida; June 28, 1899 (Pilsbry). One female.

Periplaneta americana (Linnæus).

Shovel Mount, Burnet Co., Tex.; October 16, 1901 (Schaupp). Twelve specimens,—three mature, nine immature.

Phœnix, Maricopa Co., Arizona; April 20 and 27, 1902 (Oslar). Two specimens, male and female.

Florence, Pinal Co., Arizona; May 21 and June 5, 1903 (Biederman). Two specimens, male and female.

Periplaneta australasiæ (Fabricius).

Philadelphia, Pa., June 30, 1898 (Rehn). One male.

Panchlora virescens (Thunberg).

Philadelphia, Pa. One male.

This specimen was undoubtedly imported on some tropical fruit, possibly bananas. Bananas received at Philadelphia are almost entirely from Jamaica. This is the first record for this species from the United States.

Plectoptera poeyi (Saussure).

Florida. One female.

This is the first record for this Cuban species in the United States.

Homœogamia apacha Saussure.

Florence, Arizona; May 8, June 6, July 15 and 17, 1903 (Biederman). Ten males.

Homœogamia erratica Rehn.

Florence, Arizona; June 8, July 17, 18 and 22, 1903 (Biederman). Eleven males (one immature).

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* The Orthoptera of Indiana, pp. 179-180.

Cryptocercus punctulatus Scudder.

Blowing Rock, Watauga Co., North Carolina (Willcox). One female.

MANTIDÆ.

Yersinia solitaria Scudder.

Gallinas Cañon, San Miguel Co., New Mexico; July 20, 1902 (Oslar). One male.

This record extends the range of the species, which now covers the foot-hills and plain country from western Nebraska to northern New Mexico.

Litaneutria minor (Scudder).

Blanco Co., Texas. One male.

Shovel Mount, Burnet Co., Texas; June 28–July 25, Oct. 1–Nov. 17 (Schaupp). Thirty-two males, six females.

Tempe, Maricopa Co., Arizona; April 26, 1902 (Oslar). One male.

Florence, Pinal Co., Arizona; May 14, 19, and June 13, 1903 (Biederman). Four males, two females.

The series from Shovel Mount comprises thirty-eight specimens, and exhibits a very great diversity of coloration.

Stagmomantis carolina (Johannson).

Washington Co., Texas. One female.

Shovel Mount, Burnet Co., Texas; September–November 16th (Schaupp). Twelve males, one female.

Lake Valley, Sierra Co., New Mexico (Cope). Four males.

"Fort Yuma, Cal."* (Dr. J. K. Corson). One female.

The male individuals from Shovel Mount are, with one exception, very uniform in coloration.

Stagmomantis limbata (Hahn).

Shovel Mount, Burnet Co., Texas; Nov. 16, 1901 (Schaupp). One female.

Las Truchas, Guadeloupe Co., New Mexico [4600 feet] (Clara Gerhardt). One male, submitted by Prof. Cockerell.

Phœnix, Maricopa Co., Arizona. One male.

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* This refers to California near the present town of Yuma, Arizona.

Oligonyx scudderi Saussure.

Shovel Mount, Burnet Co., Texas; October 4–18, 1901 (Schaupp). Five males, one female.

Arkansas. Collection of T. D. O'Connor, of New York City. One male.

PHASMIDÆ.

Megaphasma denticrus (Stål).

Shovel Mount, Burnet Co., Texas; July 5, 1901 (Schaupp). One male, one female.

The male is of rather small size when compared with an individual of that sex from Helotes Creek, Texas.

Diapheromera velii (Walsh).

Shovel Mount, Burnet Co., Texas; Sept. 12 and Nov. 16, 1901 (Schaupp). One male, one female.

A CATALOGUE OF TEXAN FORFICULIDÆ, BLATTIDÆ, MANTIDÆ AND PHASMIDÆ.

This catalogue is compiled from the references given by Scudder in his Index to North American Orthoptera, with the more recent additions interpolated. The records given in the preceding portion of this paper, and those from specimens contained in the collection of the Academy of Natural Sciences of Philadelphia are also included. This work, being in fact only a "first list," is necessarily very brief and somewhat unsatisfactory in character, but this is wholly due to the lack of definite localities, something greatly to be deplored when we consider the very extensive area and varied conditions of the great State of Texas.

FORFICULIDÆ.

Labidura "*riparia* (Pallas)." (Western?) Texas, March 10 (Pope).

Spongophora brunneipennis (Serville). Dallas, Dallas Co., Feb. 17 and 23, Aug. 19 (Boll). Clifton, Bosque Co., (Belfrage). "A common species, apparently, in all parts of the State." (Scudder).

Apterygida exilis (Scudder). Texas (Uhler).

Apterygida linearis (Eschscholtz). Texas (Uhler).

Labia guttata (Scudder). Bosque Co. (Belfrage).

Labia melancholica (Scudder). Waco. McLennan Co., or near Austin, Travis Co., Feb. 24 (Belfrage).

Labia minor (Linnæus). Abundant according to Scudder. Clifton, Bosque Co., June and September (Belfrage).

BLATTIDÆ.

Pseudomops cincta (Burmeister). Texas; recorded by Scudder.

Ischnoptera bolliana Saussure and Zehntner. Texas; recorded by Saussure and Zehntner. Shovel Mount, Burnet Co, June 21 and July 25, 1901 (Schaupp). Round Mountain, Blanco Co. (Schaupp).

Ischnoptera consobrina Saussure. Texas; recorded by Saussure and Zehntner.

Ischnoptera couloniana Saussure. Texas; recorded by Saussure and Zehntner.

Ischnoptera inequalis Saussure and Zehntner. Texas; recorded by Saussure and Zehntner.

Ischnoptera uhleriana Saussure. Texas; recorded by Saussure and Zehntner.

Temnopteryx texensis Saussure and Zehntner. Texas; recorded by Saussure and Zehntner.

Pelmatosilpha rotundata Scudder. Texas; recorded by Scudder.

Periplaneta americana (Linnæus). Texas; recorded by Scudder.

Homœogamia bolliana Saussure. Texas (Boll). Shovel Mount, Burnet Co., Sept. 2-Oct. 29 (Schaupp). Round Mountain, Blanco Co. (Schaupp). Austin, Travis Co., Feb. 19, 1903 (Wheeler). San Marcos, Hays Co. (Pilsbry). Devils River, Valverde Co. (Pilsbry). Pecos High Bridge, Valverde Co. (Pilsbry). Victoria, Victoria Co. Dallas, Dallas Co. Carrizo Springs, Dimmit Co. This is apparently one of the most abundant species of Texan Blattidæ.

Chorisoneura texensis Saussure and Zehntner. Texas (Boll).

MANTIDÆ.

Litaneutria minor (Scudder). Texas; recorded by Scudder. Shovel Mount, Burnet Co., June 28-July 25, Oct. 1-Nov. 17 (Schaupp). Blanco County.

Phasmomantis sumichrasti (Saussure). Texas; recorded by Saussure and Zehntner.

Stagmomantis carolina (Johannson). Texas; recorded by Saussure and Zehntner. Washington Co; Shovel Mount, Burnet Co.; Sept.-Nov. 16 (Schaupp).

Stagmomantis limbata (Hahn). Texas (Schaupp). Ringgold Barracks, Starr Co. (Schott). Shovel Mount, Burnet Co.; Nov. 16, 1901 (Schaupp).

Brunneria borealis Scudder. Texas (A. Agassiz). Gulf coast of Texas (Aaron).

Oligonyx scudderi Saussure. Texas (Boll, Belfrage, Lincecum). Dallas, Dallas Co. (Boll). Shovel Mount, Burnet Co.; Oct. 4-18, 1901 (Schaupp).

Theoclytes chlorophæa (Blanchard). Recorded from Mexico and Louisiana, and in all probability will occur in Texas. Scudder has recorded a specimen from Matamoras, State of Tamaulipas, opposite Brownsville, Cameron County.

PHASMIDÆ.

Pseudosermyle strigata (Scudder). Texas (Boll, Lincecum).

Pseudosermyle banksii Caudell. Brazos County, September (Banks). Buna, Jasper Co., November 15, 1902 (Hopkins).

Megaphasma denticrus (Stål). New Braunfels, Comal Co. (Lincecum). Gulf Coast (Aaron). Helotes, Bexar Co. (Marnock). Victoria, Victoria Co. (Caudell). Shovel Mount, Burnet Co.; July 5, 1901 (Schaupp).

Diapheromera femorata (Say). Dallas, Dallas Co. (Boll). Ringgold Barracks, Starr Co. (Schott).

Diapheromera veliei Walsh. Dallas, Dallas Co. (Boll). Ringgold Barracks, Starr Co. (Schott). Pecos River [New Mexico or Texas] (Pope). Shovel Mount, Burnet Co. (Schaupp).

Anisomorpha buprestoides (Stoll). Texas (Boll).

Some North American Bees: Osmia and Triepeolus.

By T. D. A. Cockerell.

Triepeolus mesillæ, Ckll. var. *a*.

♀.—Scutellum with two very large spots; anterior lateral margins of mesothorax faintly reddish; pleura with a large red patch.

Hab.—Las Cruces, N. M., September 22, at rest, hanging by jaws on *Verbesina encelioides*. The color-variation here described nearly agrees with the normal coloration of the closely allied *T. bardus*, as given by Mr. Brues. The insect may be known from *bardus* by the conspicuous light hair about base of antennæ, the red anterior margin of clypeus, and the straight or barely curved scutellar spines. Perhaps *mesillæ* is not more than a geographical name of *bardus*; the latter occurs from eastern Texas to Illinois.

Osmia cerasi, Ckll.

Two females, not hitherto recorded, are from Las Cruces, N. M., April 10 (*C. H. T. Townsend*) and Santa Fe, N. M. (*Miss Myrtle Boyle*). The latter locality, being in the Transition zone, is rather surprising.

Osmia novomexicana, n. sp.

♀.—Length, 14 millim.; similar to *O. grandior* Ckll., but differing as follows; hair between antennæ very pale yellowish; head larger, the face being broader, facial quadrangle conspicuously broader than long; hair on thoracic dorsum brighter, that on scutellum a very lively ferruginous; hair on middle of first two abdominal segments all white, the first segment has a little, and the second much black hair at the sides; upper surface of abdomen brilliant prussian blue, only the basal parts of the segments, over which the other segments slide, being black. In my original description of *grandior* I say the clypeus is ordinary. This is not quite true; in *grandior* and *novomexicana* the anterior margin of the clypeus is produced, though the sides slope away gradually from the broadly truncate front edge. These bees belong to the group which Robertson has named *Centrosmia;* but the characters he indicates, based on *O. bucephala* do not hold good for all the allied forms. The malar space in *O. grandior* is practically obsolete, while in *O. novomexicana* it is distinctly present, but excessively narrow. In *O. grandior* the basal nervure falls a trifle short of the transverse-medial; in *O. novomexicana* they exactly meet. The head of *O. novomexicana* is hardly as big as the thorax; the clypeus is dull, with very dense, minute punctures; the apical tooth of the mandibles is considerably longer than the middle one; hair of pleura, cheeks and clypeus, and ventral scopa all black; legs black, without any metallic tinge.

Hab.—Arroyo Pecos, Las Vegas, New Mexico, June 7. (*Wilmatte P. Cockerell.*)

Osmia (Gnathosmia) mandibularis Cress.

Two females at Rociada, New Mexico, at flowers of *Carduus*, August 10 and 11 (*T. D. A.* and *W. P. Cockerell*). This beautiful and interesting species must fall in Robertson's group *Gnathosmia*, although the clypeus has no distinct keel. The species is new to New Mexico.

Osmia chlorops Ckll. and Titus. ♂.

This belongs to Robertson's group *Monilosmia*, and is closely related to *O. canadensis*.

Osmia iridis Ckll. and Titus. ♂

This has the first ventral segment of abdomen emarginate, and so seems to belong to Robertson's group *Xanthosmia*; yet it differs in having the sixth dorsal segment entire, and the fourth antennal joint not so long as 2 + 3. The basal nervure falls a fraction short of the transverso-medial; the second ventral segment is very large, with much black hair, and its hind margin is emarginate in the middle. The third ventral segment is nearly concealed by the second, and its margin fills the notch in the latter; so that, viewed from the side, the margin of the second seems quite entire; though, viewed from beneath, it is conspicuously emarginate. The apex of the abdomen is bidentate, as in most species. The apical tooth of the mandibles is long and sharp; the fifth joint of the maxillary palpi is minute.

In speaking of his interesting captures at Thomasville, Ga., Mr. Morgan Hebard refers to taking *Nisoniades nævius* there, and considers this its most northern record. I note also that Dr. Skinner, in his catalogue, gives only Indian River, Florida, as its locality. I thought until now, that it was well known as a member of the coast fauna of South Carolina. I have always found it abundant in the vicinity of Charleston, South Carolina, and occasionally as far inland as Clarendon County. On the sea coast islands, particularly the Isle of Palms (formerly known as Long Island) *Nisoniades nævius* and *petronius* and the little *Pholisora hayhursti* are regularly found in the summer months, the two former being especially characteristic and abundant in all the thistle patches that fill the opening in the Palmetto and Live Oak thickets.--ELLISON A. SMYTH, JR., Blacksburg, Va.

A COMMON method of gambling among criminal convicts in Siberian étapes is to spread down an overcoat or a dirty linen foot-wrapper on the floor of the kamera, and guess at the number of fleas that will jump upon it within a certain length of time. Every convict, of course, backs his guess with a wager. Another method, equally common, is to draw two small concentric circles on one of the sleeping-platforms, put a number of lice simultaneously within the inner circle, and then give all the money that has been wagered on the event to the convict whose louse first crawls across the line of the outer circle. Exiles on the road are not supposed to have playing-cards, but facilities for gambling in the manner above described are never lacking.—*Century Magazine, May, 1889.*

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and, as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form, will be given free, when they are wanted; and this should be so stated on the MS., along with the number desired. The receipt of all papers will be acknowledged.—ED.

PHILADELPHIA, PA., DECEMBER, 1903.

One of the most useful works that could be produced, and one that is badly needed in American entomology, is a reference catalogue of the Coleoptera. An essential feature of such a catalogue would be the distribution of the species. It would give an immense impetus to the study of this order of insects, and induce persons to name their material from original sources, whereas, at the present time, much of it is done by comparison, which makes collectors, but not students. It is often desirable to know something of the distribution of a beetle, and it is simply impossible to find it out without labor that is out of all proportion to the return. We know of nothing that would be a greater boon to workers in the order, and it would at once place the study of these insects on a much higher plane. To be sure, we have Gemminger and Harold's Catalogue, published (commenced) in 1868, but now antiquated and not accessible to many students. We have been unofficially informed that the National Museum would undertake the publication of such a work if an author can be found to prepare it. We hope we may have the pleasure of seeing this catalogue in the very near future.

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141 LEPIDOPTERA captured in four hours at **Meramec Highlands**, St. Louis Co., Mo., April 12th, 1903.

We arrived at the Highlands at 9.30 A. M. via. Frisco R. R. Mr. P.

Fischer of Buffalo, N. Y., and myself met Mr. Wm. Schneider and Mr. A. Neuman, both of St. Louis, got our nets out as soon as we got off the train, saw and captured *P. ajax walshii*, Lycænas and Nisoniades plentiful, went over to the Meramec River, captured *A. genutia*, *A. olympia rosa*, *Anæa andria*, *P. troilus*, *turnus* and *ajax walshii*, *T. irus*, *P. epimenis*, *P. protodice vernalis*, and many others, which kept us busy. The handle of my net broke about noontime, and as I had nothing to repair it with, made the rest of my captures with the frame and net in hand. I gave it up at 1 30 P. M. Counting up my four hours catch, I had 21 *A. olympia rosa*, 48 *A. genutia*-29♂ 19♀, 11 *N. brizo*, 7 *N. juvenalis*, 5 *N. horatius*, 8 *A. andria*-5♂ 3♀, 10 *P. ajax walshii*, 1 *P. troilus*, 2 *P. turnus*, 3 *P. epimenis*, 1 *T. irus*, 3 *P. protodice vernalis*, and 15 *Lycæna*. I didn't have time to paper them as I caught them. I had two cyanide bottles, with one I took them from the net, the other I used to store them in. I used the cyanide bottles for the small ones only, the large ones I papered as I caught them. I don't know how many the rest of the party caught, but judging from the way they were chasing around, I guess they all made good catches. Mr. Fischer of Buffalo thought Meramec Highlands a fine collecting place, so all entomologists who intend visiting the St. Louis World's Fair next year, should visit Meramec Highlands and take their nets along.—CHAS. L. HEINK.

HENICOPS.—Two species of the genus *Henicops* Newp., as defined by Latzel, have been reported from North America. One, the well-known European species *fulvicornis* Mein., ranges entirely across the northern section of our country. I have found it in good numbers in Utah, Idaho and Oregon; and it was previously known from New York, Minnesota, etc., and as far south in the Mississippi valley as Arkansas. The second species, *dolichopus* Chamb., known first from the upper parts of the Wahsatch mountains, I have since taken also at high elevations in the Rocky, Uintah and Sierra Nevada Ranges. From a study of Newport's type species, Pocock has now so restricted the genus *Henicops* as to exclude both the species mentioned above. The first, *fulvicornis*, must in consequence revert to the genus originally erected for it by Meinert, *i. e.* *Lamyctes*; while *dolichopus* must go into another genus, *Zygethobius*, differing in having pores upon the last five pairs of coxæ instead of upon only the last four, in a different arrangement of the spiracles, and in other features.—R. V. CHAMBERLIN.

TELAGRION DÆCKII (ODONATA) AT RALEIGH, NORTH CAROLINA—June 10, 1903, found the species common around the east edge of Felts swamp or marsh, a large open space of several acres filled with water and mud from ankle deep to nearly waist deep but very little open water; instead grown up with marsh grass, arrow arums, bonnet lilies, and in summer with introduced Egyptian Lotus. On the east edge the marsh extends into woods and tall bushes. The males were found mainly in partially shaded spots along the edge of the bushes. 25♂ and 1 ♀ taken.

June 13, took 65 males and about 15 females; males round edge of swamp as before; females and more males in drier and shadier places among the bushes, where there was little or no standing water and some few yards from east edge of swamp.

June 22, took some 15 females in same place as before; the species was common, but did not seem as numerous as on 13th.—C. S. BRIMLEY.

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Doings of Societies.

The November meeting of the Newark [N. J.] Entomological Society was held November 8th, with President Engelman in the chair and fourteen members present. The minutes of the previous meeting were read and adopted.

The election of officers resulted as follows:

Mr. George J. Keller, President; Mr. George Stortz, Vice-President: Mr. O. Buchholz, Secretary; Mr. S. Seib, Treasurer: Mr. William Broadwell, Librarian; Mr. E. A. Bischoff, Curator, Coleoptera; Mr. H. H. Brehme, Curator, Lepidoptera.

Mr. Grossbeck reported the capture of three specimens of *Sciapteron tricincta*, Mr. H. Rummell the capture of an almost black specimen of *Melitaea phaeton* at Plainfield, May 31st. Mr. Buchholz reported the capture of the following specimens of Lepidoptera: *Sarrothripa lintneriana*, 7–30; *Arctia vittata*, 8–24; *Heterogenea textula*, 7–23; *Dryopteris rosea*, 9–10; *Acronycta vinnula*, 5–17; *Acr. superans*, 4–10; *Hadena remissa*, 6–16; *Hydroecia harrisii*, middle of September; *Hyd. speciosissima*, 10–1; *Hyd. marginidens*, 9–15; *Hyd. limpida*, 10–5; *Trileuca rectifascia*, 7–16—all in Elizabeth.

OTTO BUCHHOLZ, *Secretary*.

At the meeting of the Feldman Collecting Social, held October 21st, at the residence of Mr. H. W. Wenzel, 1523 S. Thirteenth St., Philadelphia, fifteen persons were present.

Dr. Castle, on behalf of Mr. J. H. B. Bland, recorded the capture of *Tachygonus spinipes* in abundance at English Creek, N. J.

Prof. Smith read an extract from the *Century Magazine* of 1889, describing a method of gambling in Russia by means of the movements of certain insects. [See page 333, *antea*.]

Dr. Castle suggested a method for mounting insects with smooth undersurfaces. Instead of fastening them by glue to slips, a small incision is made in the side of the insect, into which the slip is inserted.

Dr. Skinner suggested the immediate immersion of insects in gasoline in collecting, as they frequently injure themselves in fluttering about the collecting bottle.

Messrs. Wenzel and Smith said gasoline hardens the specimens, so that mounting is made difficult.

Dr. Dedrick spoke of the prevalence of body lice among the Esquimaux, and stated that the means adopted to rid themselves of the pest is to hang out their clothes and allow the insects to freeze, and by beating their clothes to dislodge the insects.

Mr. Laurent exhibited some live specimens of *Tenodera sinensis*.

Mr. Wenzel referred to the statement that the only eastern species of *Cicindela* attracted by light is *C. punctulata*. At Anglesea, N. J., he had observed *C. marginata* coming to light, and he believed all the species would be so attracted were the lights situated near their habitats.

Prof. Smith stated during the past summer he observed many specimens of May flies which had been beaten down by rain. Nearly all were females, and from the abdomen of each extended two strings of eggs, each being as large as the body of the insect. In this insect the ovaries have each a separate opening from the body, instead of opening into a single passage or vagina, as in most insects. During the summer he had collected 33 species of mosquitoes in New Jersey, and of these he had bred 31 species.

Mr. Daecke reported the capture of *Eucosma adamontona*, which, described from Lapland in 1825, has not been found until the present specimens were taken in New Jersey. He also exhibited *Belvosia bifasciata*, showing interruption in an auxiliary abdominal band on the second segment.

Dr. Skinner stated that two nests of *Polistes texanus* recently received had at least one-third of the specimens stylopized by *Xenos*. He hoped the members would collect *Polistes* with a view to rearing *Xenos*, and also *Stylops*, which occurs on species of *Andrena*. He believed *Xenos* coleopterous, and allied to the Rhipiphoridæ.

Prof. Smith stated that the occurrence of these insects with *Polistes* seems to be seasonal, sometimes being frequently found, and again in certain seasons being rare or not found at all.

Mr. Hardenberg corroborated Prof. Smith's statement that, as a rule, accurate data for specimens have not been attached to specimens by European collectors.

Mr. Wenzel stated that the Phymatodes mentioned at June meeting is *P. ater*, and not *aeneus*, as there given.

Mr. C. B. Hardenberg was elected a member.

WILLIAM J. FOX, *Secretary*.

A meeting of the American Entomological Society was held October 22d. Dr. P. P. Calvert, president, in the chair. Sixteen persons were present, including Dr. L. O. Howard, of Washington, D. C., corresponding member. The C. A. Blake collection of Lepidoptera was formally presented, and a vote of thanks tendered the family of Mr. Blake.

Mr. H. W. Wenzel referred to a recent paper by William Beutenmuller on the Coleoptera from the Black Mountains of North Carolina. The speaker said he had all the species described. LeConte's species, *Cychrus violaceus*, was mentioned, and a series exhibited showing very considerable variation. Other species mentioned in the paper were shown.

Dr. Howard expressed his pleasure at being present as a member. He spoke of certain critical views expressed as to American entomology, and said Americans lead the world in economic entomology, and hold their own in systematic work. He also mentioned the monograph he was preparing for the Carnegie Institute, on the Culicidæ, and said a number of entomologists, under his direction, were rearing mosquitoes in various parts of the country. Fifty species had been studied to date and their life-histories discovered. The great amount of work recently done had made his former work on mosquitoes obsolete. In a work published a few years ago on Insect Parasitism, he mentioned the fact that *Anthrenus varius* fed on the debris of the cocoons of the Tussock moth. This year the moth was said to be scarce, on account of the same species feeding on the living egg masses.

Dr. Castle spoke of the difficulty of mounting smooth-bellied beetles on card mounts and he had devised a new method, which consists of making an incision into the side of the insect, into which the end of the cardboard point is inserted.

Mr. Laurent exhibited a specimen of *Plusia verruca* collected by Dr. Castle in Florida. Mr. Daecke exhibited beetles taken at Manumuskin, N. J.: *Pachnæus distans*, new to the State, and *Bellamira scalaris*, which has a northern range. Specimens of *Micrathyria berenice* showing variation were exhibited. In rearing mosquito larvæ in a jar, he had noticed many missing, and found they were being devoured by water *Hydra*. The living larvæ of *Corethra* were shown.

Dr. Calvert said the species of dragon-fly, *M. berenice*, was the one reared from salt water larvæ by Mr. Viereck. The water was about one-half as salty as that of the ocean.

Dr. Howard said that Dr. H. T. Fernald had called attention to the fact that *Hydra* eat mosquito larvæ. Dr. Calvert spoke of the recent work by Dr. Sharp on the Coleoptera of Hawaii, and mentioned wingless beetles, the absence of wings being an advantage to them. Collecting on mountains was discussed, especially in the snow. Dr. Howard gave an account of an ascent made by Prof. Poulton in the mountains of British America, in search of insects.

HENRY SKINNER, *Secretary*.

A meeting of the Entomological Section of the Chicago Academy of Sciences (Chicago Entomological Society) was held in the John Crerar Library, October 15, 1903. Eight members present. President Longley occupied the chair.

Mr. Kwiat took the floor and led a discussion on the genus *Crocota*. He exhibited a number of specimens of *Crocota* (*Eubaphe*), and spoke of his efforts to identify them.

The literature on the subject is widely scattered and not at all accessible. He was able to identify positively only one species—*E. laeta*. Among a series of specimens from St. Louis, he had one female agreeing fairly well with the description of *E. opella*, the others of the series grading into what Mr. Kwiat called *belmaria*, from New Brighton, Pa.

Of this latter series, one specimen (♀) answered quite well to Ehrman's description of *E. rubricosta*, but the red is not as pronounced as the description indicates.

The remaining forms (of which there were five or six) are no doubt in *E. immaculata* and *E. aurantiaca* and its varieties. What Mr. Kwiat believed to be *E. immaculata* and its variety *trimaculosa* failed to answer to the description in that they lacked the rose color entirely. Mr. Longley, however, exhibited two specimens of the same form with quite a pronounced rosy tinge; so the identification is probably correct.

E. aurantiaca, var. *quinaria*, was easily identified, and Mr. Kwiat expressed the opinion that these might prove to be the ♀♀ of *immaculata*, they having been taken in the same locality as *immaculata*, and his entire catch of that species, some thirty specimens, being all males.

He has one female with primaries of a deep chocolate brown with three white spots, and secondaries yellow, slightly tinged with reddish, having a heavy black discal mark and two large submarginal spots. This specimen resembles the *immaculata* form very closely in general appearances. Mr. Kwiat declined to express an opinion on the others, although *brevicornis* was undoubtedly represented by typical specimens.

He expects to continue his study of the genus, and will make an effort to procure eggs and larvæ for breeding purposes

Mr. Longley exhibited a number of specimens.

Informal discussion followed Mr. Kwiat's talk.

JOHN COMSTOCK,
Recorder, Entomological Section.

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Wanted.—ENT. NEWS, vol. viii, No. 6.—Louis H. Joutel, 164 E. 117th Street, New York City.

Arctians.—Living eggs or larvæ of any North American moths of the genus *Apantesis* wanted for purposes of studying preparatory stages. Will be glad to render help, if possible, as to wants of anyone assisting. Arthur Gibson, Cent Exp. Farm, Ottawa, Can.

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I wish to exchange American and European Lepidoptera and Coleoptera for American insects for the season of 1903. I am also a preparator of larvæ.—Karl Haertel, 198 California St., Newton Mass.

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Wanted eggs of *Argynnis diana*.—I. Ruston, 10 Carlton Road, Workshop, Nottinghamshire, England.

Wanted.—Lepidopterists desiring *Bembecia marginata* and var. *albicoma*, to send exchange lists of North American moths.—Henry Engel, Genl Delivery, Pittsburg, Pa.

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